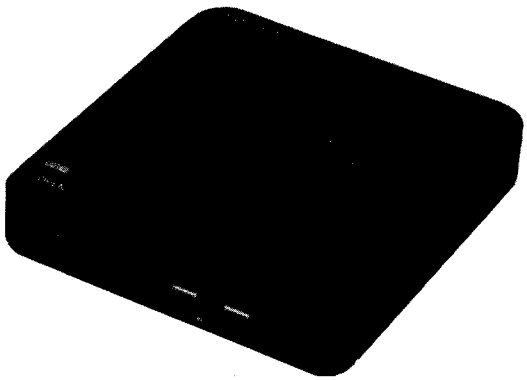
# D-2/20

# SERVICE MANUAL

*US Model*
*Canadian Model*
*D-2*
*AEP Model*
*UK Model*
*E Model*
*Australian Model*



# Discman

## SPECIFICATIONS

**CD section**

| | |
|---|---|
| System | Compact disc digital audio system |
| Laser diode properties | Material: GaAlAs<br>Wavelength: 780 nm<br>Emission duration: Continuous<br>Laser output: Less than 44.6 μW<br>(This output is the value measured at a distance of 200 mm from the objective lens surface on the Optical Pick-up Block.) |
| Frequency response | 20–20,000 Hz: ±½ dB |
| Output (at 9 V input level) | Line output (stereo minijack)<br>Output level 1 V rms at 47 kilohms<br>Load impedance over 10 kilohms<br>Headphones (stereo minijack)<br>9 mW + 9 mW at 32 ohms |

**General**

| | |
|---|---|
| Power requirements | Optional<br>• DC IN 9 V jack accepts the Sony AC power adaptor (supplied)<br>• DC IN 9 V accepts the Sony CPM-100P mount plate for use on 12 V car battery<br>DC 6 V, four size AA (LR6) alkaline batteries |
| Power consumption | 1.2 W DC |
| Dimension | Approx. 136 × 38 × 149 mm (5⅜ × 1½ × 6 in.) (w/h/d) incl. projecting parts and controls |
| Weight | Approx. 450 g (1 lb) net<br>Approx. 545 g (1 lb 3 oz) incl. batteries |
| Supplied accessories | Connecting cord (1)<br>Carrying belt (1)<br>AC power adaptor (1) |

**CAUTION**

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

MICROFILM

# COMPACT DISC COMPACT PLAYER

SONY®

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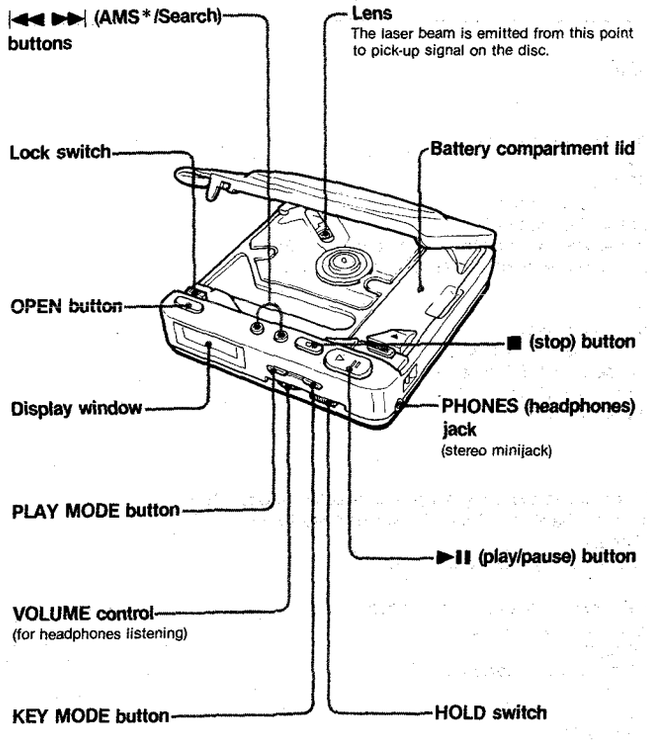
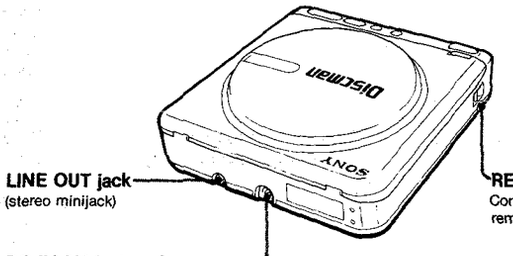
# SECTION 1
# GENERAL




*AMS is an abbreviation for Automatic Music Sensor.

**SAFETY-RELATED COMPONENT WARNING!!**

**COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.**

**ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!**

**LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.**

# SECTION 2
# SERVICING NOTES

## NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

### Flexible Circuit Board Repairing

- Keep the temperature of the soldering iron around 270℃ during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

### Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

### Before Replacing the Optical Block

Please be sure to check thoroughly the parameters as par the "Optical Block Checking Procedures" (Part No. : 9-960-027-11) issued separately before replacing the optical block. Note and specifications required to check are given below.

- FOK output : IC501⑨pin
  When checking FOK, remove the lead wire to disc motor and unsolder and open IC801㉒pin (FOK).
- S carve P-to-P value : 3Vp-p
  When checking S carve P-to-P value, remove the lead wire to disc motor.
- Adjusted part for focus gain adjustment : RV501
- RF signal P-to-P value : 0.7 – 1.25Vp-p
- Traverse signal P-to-P value : 1.5Vp-p
- The repairing grating holder is impossible.
- Adjusted part for tracking gain adjustment : RV502

## NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe more than 25cm away from the objective lens.

### Laser Diode Check Procedure

The laser diode on this set will not emit unless the top panel is closed and S801 (leaf SW type) is turned on. The laser diode will always emit even if focus search is not performed in service mode.
The laser diode is checked using the current value which flows to the laser diode inside the optical pick-up block.

**Procedure 1 (service mode or normal operation)**

Check the laser diode emission with the eye.

1. Open upper panel.
2. S801 on as Fig. 1.
   (In service mode, this operation is not necessary.)
3. Press the ▶II key.
   (In service mode, this operation is not necessary.)
4. Observe the objective lens and confirm that the laser diode is emitting light. At this time, the laser diode goes on about 10 seconds due to focus serarch. If it does not, APC circuit or optical pick-up block is defective.

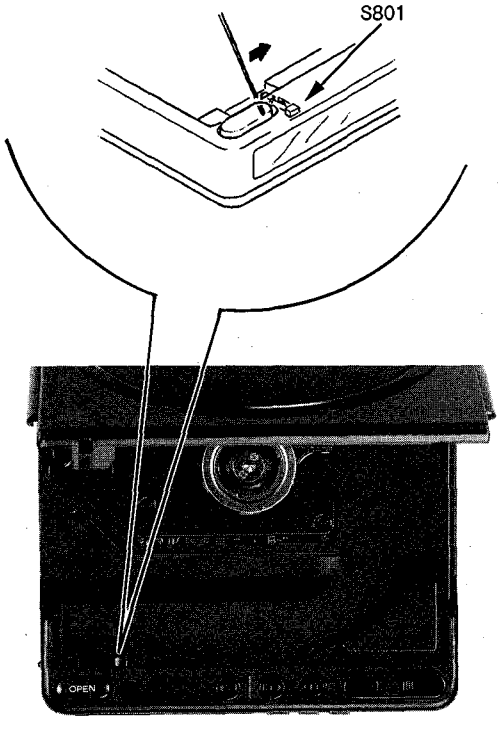
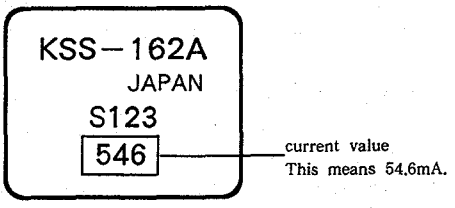



Fig.1 Turning S801 on

**Procedrue 2 (service mode or normal operation)**

Check by the current with flows in the laser diode.

1. Close the top panel.
2. Remove the main board and read the current value on the label affixed to the UPF.
   (Label on optical pick-up block)




   The current value varies with the set.
3. Connect a VOM as shown in Fig. 2.
4. Press the ▶II key.
5. Calculate the current by the VOM reading.
   VOM reading (V) ÷10=current (A)
   ex. VOM reading=0.56V
   0.56÷10=0.056 (A) =56 (mA)
6. Confirm that the ammeter reading is within the range given below.
   value on label$^{+5}_{-11}$ mA (25℃)
   variation relative to temperature : 0.4mA/℃
   (Current increases when temperature rises and decreases when it drops.)

If the value is more than the range give, APC circuit has been defective or the laser diode has deteriorated.
If it is less, APC circuit or optical pick-up block is defective.

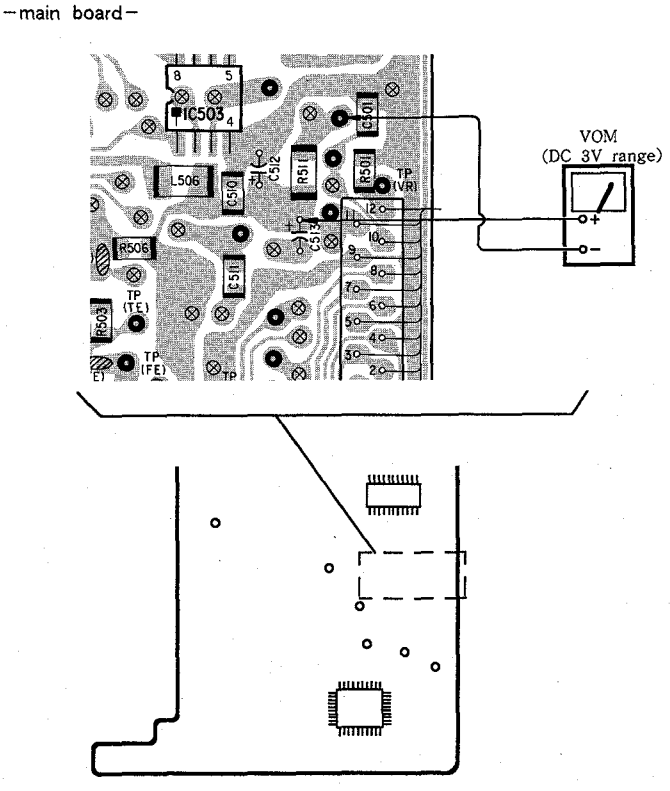



Fig.2 VOM Connection

## SERVICE MODE (service program)

This set has built-in service program in the microcomputer as usual sets.
The operation method of service program is explained below.

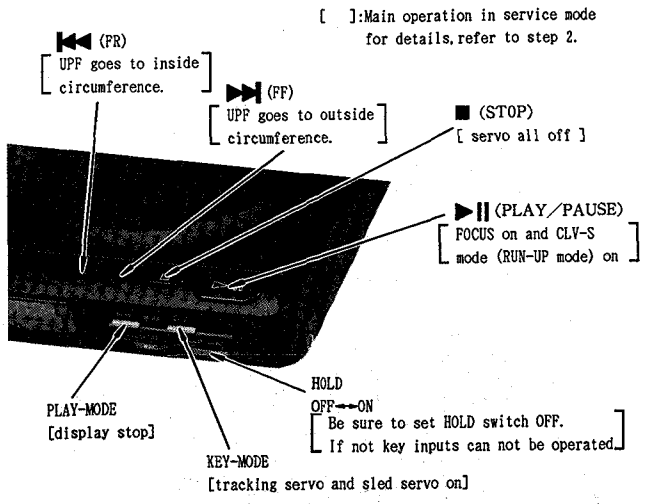



Fig.3 Key Positions

**• Step 1 (Service Mode setting method)**

1. Turn the HOLD switch OFF with the external power supply not plugged in (no power applied to set) and press the ⏯ key.
2. Solder jumper TEST terminal.
   (IC801 pin㉔(TEST) is grounded.)
3. Plug in external power supply.
   This puts the set into service mode.

**• Step 2 (Service Mode operation)**

1. When service mode is set, the display will change 6 times, and those 6 changes will be repeated over and over.
   With this the LCD display should be present in service mode. Even if LCD dose not display, other operations will be performed.
2. When ⏭ or ⏮ key is pressed, the UPF moves to the inside or outside circumference. Tracking servo and sled servo go off when this is done, so press KEY-MODE to turn on the tracking servo if necessary.
3. When PLAY-MODE is pressed, the display stops. When PLAY-MODE is released, the display continues to change. This allows check of each segment.
4. When ⏯ Key is pressed, CLV-S (pull-in mode) starts while performing focus search. When there is no disc installed, focus search is repeated several times while disc motor is rotating.
5. When KEY-MODE is pressed, tracking servo, sled servo and CLV-A (servo during PLAY) go ON.
6. When 4 and 5 are performed, the disc begins to play. At this time, the top panel should be closed and S801 are to be ON. A sound is not produced as muting is ON.
7. All servo (focus, tracking, sled and spindle) go off when ■ key is pressed.

**• Step 3 (Service Mode release)**

1. First be sure to unplug the external power supply, then remove the solder jumper TEST terminal.
2. The set will now operated normally.

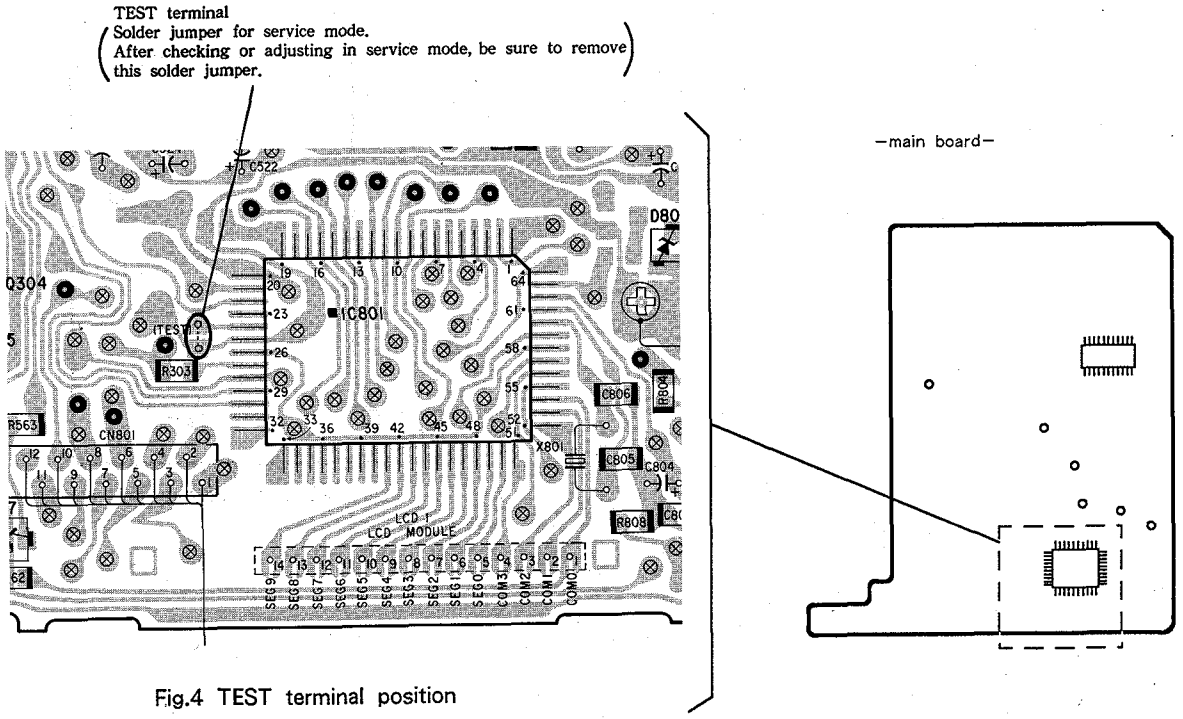



Fig.4 TEST terminal position

# SECTION 3
# ELECTRICAL ADJUSTMENTS

### Notes on Adjustment

1. Perform adjustments except for RECHARGEABLE VOLTAGE ADJUSTMENT in service mode.
   Be sure to release service mode after completing adjustment.
   (Refer to "Service Mode (service program)" on page 5.)
2. Perform adjustments in the order given.
3. Use YEDS-18 disc (part No. : 3-702-101-01) unless otherwise indicated.
4. Power supply voltage : DC 9V
   HOLD switch : OFF

### PREPARATION

Put the set into service mode (See page 5.) and perform the following checks. Repair if there are any abnormalities.

**• Sled Motor Check**

1. Press the OPEN button and open the top panel.
2. Press the ⏭, ⏮ keys and make sure that the opticl pick-up block moves smoothly, without catching, from the inmost → outmost → inmost circumference.
   ⏭ : opticl pick-up block moves outward
   ⏮ : opticl pick-up block moves inward

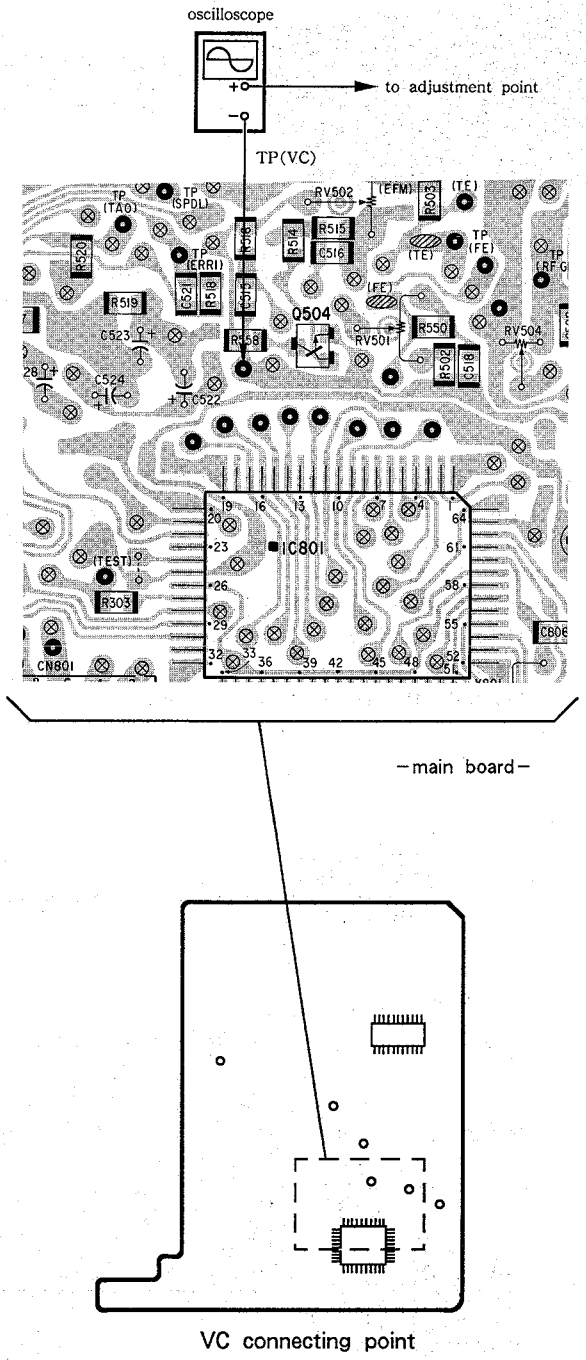
**• Focus Search Check**

1. Press the OPEN button and open the top panel.
2. Press the ⏯ key. (Focus search is performed continuously.)
3. Observe the opticl pick-up block objective lens and check that it moves smoothly up and down with no catching or noises.
4. Press the ■ key.
   Check that focus search operation stops. If it does not, press the ■ key again.

**VC (1/2 Vcc) Connecting Point**

FOCUS BIAS ADJUSTMENT
TRACKING BALANCE ADJUSTMENT

When the adjustments above are performed, connect the ⊖ side of oscilloscope to the point below.

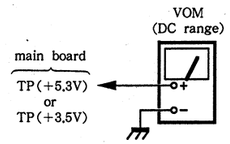



VC connecting point

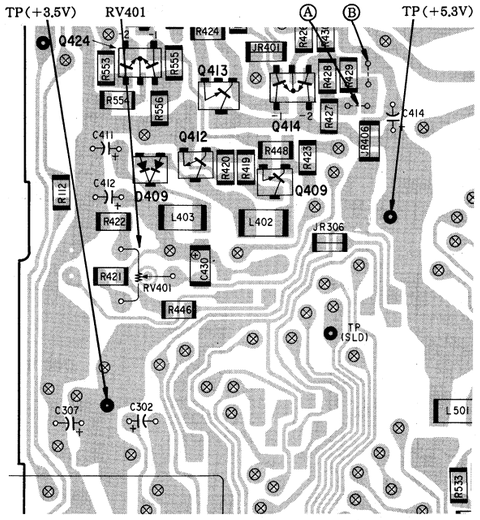
## 5.3V Adjustment

**Adjustment Procedure :**

1. Put the set into service mode (see page 5).
2. Connect the VOM to main board test point TP(+5.3V).
3. Adjust RV401 for 5.2V−5.3V reading on the VOM.
4. After adjustment, release service mode (see page 5).




**Adjustment Location :** main board




## 3.5V Adjustment

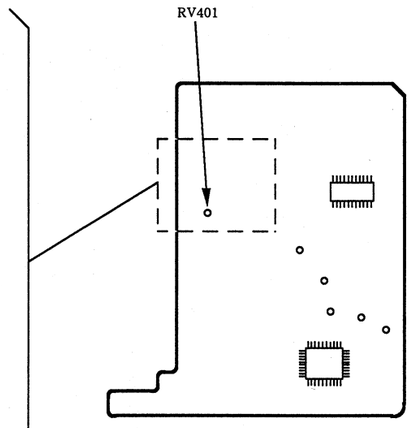
**Adjustment Procedure :**

1. Put the set into service mode (see page 5).
2. Connect the VOM to main board test point TP (+3.5V).
3. Adjust the pattern connection (Ⓐ or Ⓑ) to obtain 3.45V to 3.6V reading on the VOM.

| pattern connection | | VOM reading |
|---|---|---|
| A | B | |
| ○ | × | down |
| × | × | ↕ |
| × | ○ | ↕ |
| ○ | ○ | up |

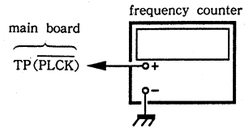
○: short × : open

4. After adjustment, release service mode (see page 5).



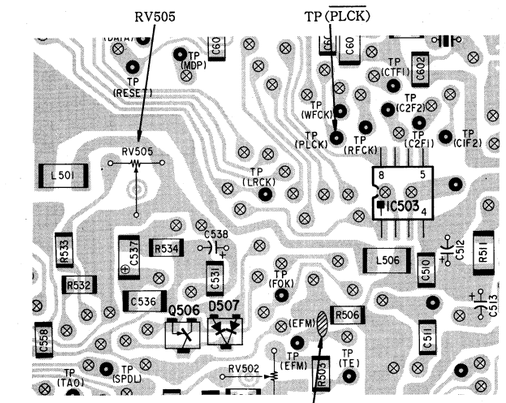

## PLL Free Run Frequency Check and Adjustment

**Check／Adjustment Procedure :**

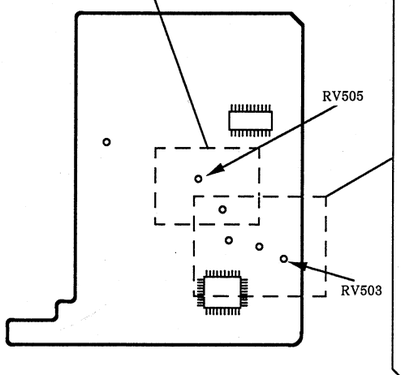



1. Disconnect EFM solder jumper terminal in the diagram below.
2. Connect a frequency counter to main board test point TP($\overline{\text{PLCK}}$).
3. Put the set into service mode (See page 5).
4. Check that the frequency counter reading is 4.31±0.01 MHz. If not, adjust RV505 so that it is 4.31±0.01MHz.
5. After adjustment, release service mode (see page 5).
6. Short the jumper terminal disconnected in step 1.

**Check／Adjustment Location :** main board




EFM solder jumper terminal

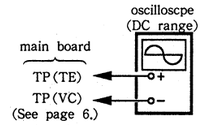



## Tracking Balance Adjustment

**Conditions :**

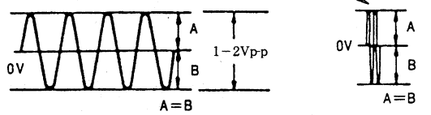
The set should be placed either horizontally.

**Adjustment Procedure :**



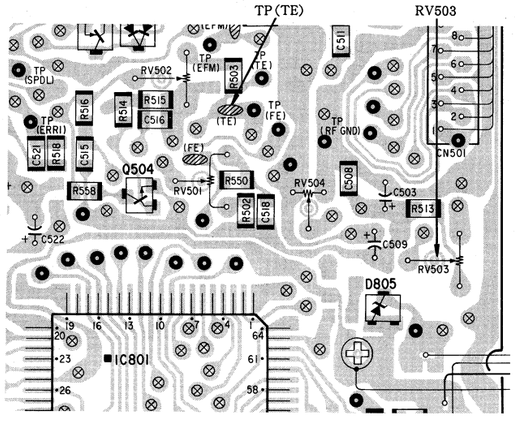

1. Connect the oscilloscope to main board TP(TE).
2. Put the set into service mode (See page 5.)
3. Press the ⏭ and ⏮ keys to move the opticl pick-up block to the center.
4. Insert the disc (YEDS-18) and close the top panel.
5. Press the ⏯ key.
   ( It will go from focus search to focus on, and CLV pull-in mode state. Tracking and sled are OFF. )
6. Adjust RV503 so that the oscilloscope wavaform is symmetrical on the top and bottom in relation to 0V.

**Note :** Take sweep time as long as possible to obtain best waveform.




7. Unplug the external power supply to stop spindle motor from rotating.
8. After adjustment, release service mode (see page 5).

**Adjustment Location :** main board

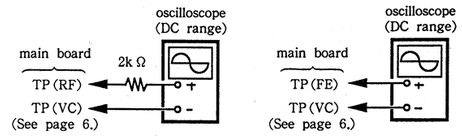


## Focus Bias Adjustment

**Conditions :**

The set should be placed either horizontally.

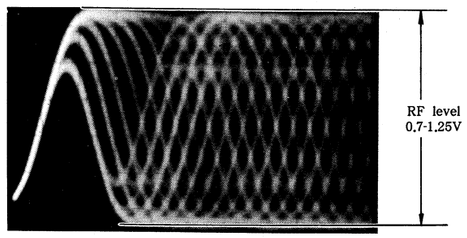
**Adjustment Procedure :**




1. Put the set into service mode (See page 5).
2. Connect the oscilloscope to main board test point TP(RF).
3. Press the ⏭ and ⏮ key to move the optical pick-up block to the center.(Move the optical pick-up block to the music area on the disc to enable easy visibility of the eye pattern).
4. Insert the disc (YEDS-18) and close the top panel.
5. Press the ⏯ key.
   (It will go from focus search to focus on, and CLV pull-in mode state.Tracking and sled are OFF.)
6. Press the KEY-MODE button (Tracking and sled go ON.)
7. Adjust RV504 so that the oscilloscope waveform eye pattern is good. A good eye pattern means that the diamond shape (◇) in the center of the waveform can be clearly distinguished.

**• RF Signal Reference Waveform (eye pattern)**

VOLT/DIV : 200mV
TIME/DIV : 500nS



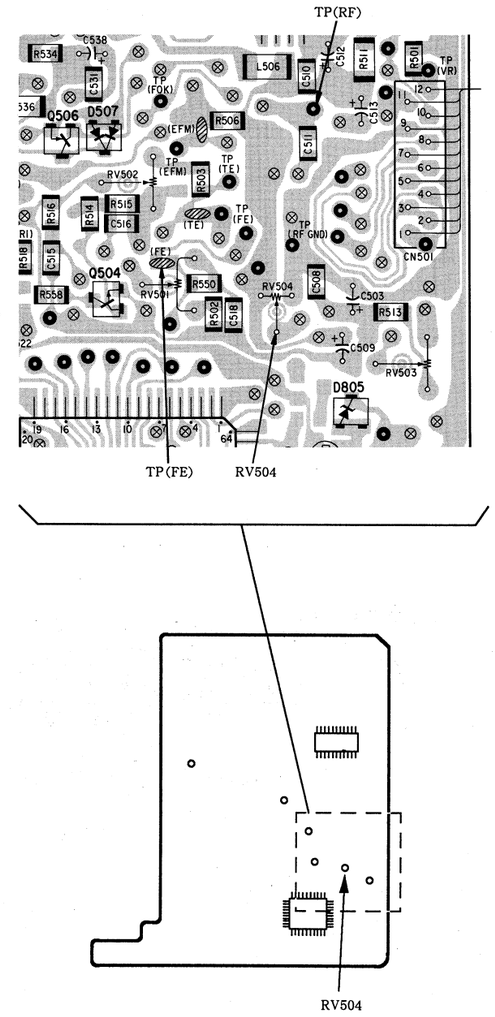

When observing the eye pattern, set the oscilloscope for AC range and raise vertical sensitivity.

8. Unplug the external power supply to stop spindle motor from rotating.
9. Remove the disc and connect the oscilloscope to main board TP (FE).
10. Adjust RV503 again refering to the table followed.

| voltage of TP (FE) | adjustment |
|---|---|
| more than +100mV | Not adjust again. |
| +50 to 100mV | Adjust RV503 again for +100mV reading on oscilloscpe |
| less than +50mV | Not adjust again. |

11. After adjustment, release service mode (see page 6).

**Adjustment Location :** main board






## Reference

**Focus/Tracking Gain Adjustment**

A frequency responce analyzer or CD jig is necessary in order to perform this adjustment exactly.

However, this gain has a margin, so even if it is slightly off, there is no problem. Therefore, do not perfrom this adjustment.

Focus/tracking gain determines the pick-up followup (vertical and horizontal) relative to mechanical noise and metchnical shock when the 2-axis device operate.
However, as these reciprocate, the adjustment is at the point where both are satisfied.

- When gain is high, the noise when the 2-axis device operates increases.
- When gain is low, it is more susceptible to mechanical shock and skipping occurs more easily.

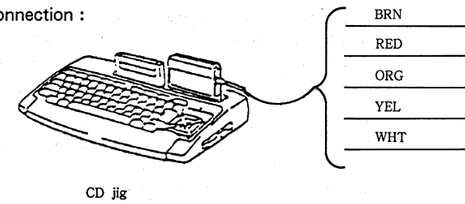
This adjustment is to be performed when replacing the following parts :

- UPF (optical pick-up block)
- RV501 (focus gain volume)
- RV502 (tracking gain volume)

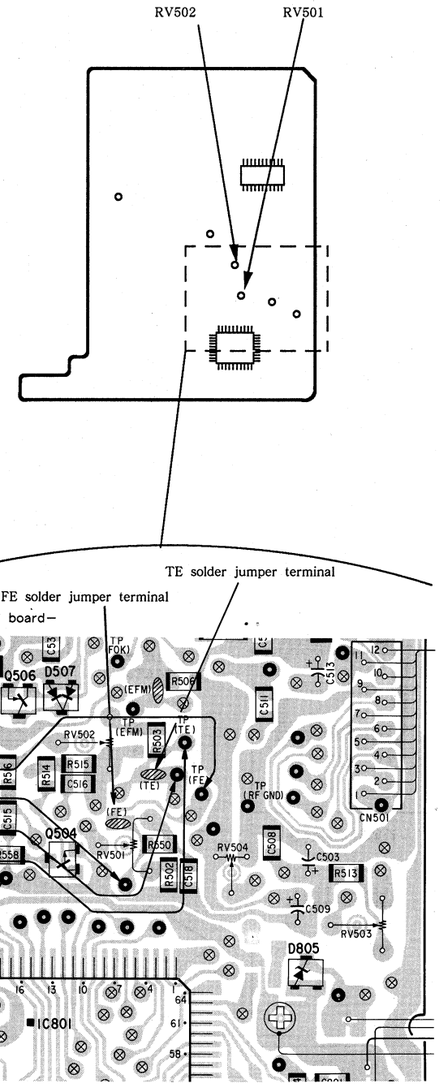
On this set, it is very difficult to simplify this adjustment. For those sets on which symptoms such as "occasional skipping" are hard to discover, or it is hard to tell if the set has been repaired, use the CD jig and perform this adjustment. Refer to the diagram below for connection of the CD jig. The adjustment procedure is described in the separate CD jig Instruction Manual.

Please be careful no to move RV501 (focus gain volume), RV502 (tracking gain volume) ordinarily.

CD jig connection :



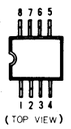

Remove the solder jumpers at the TE and FE locations and connect the CD jig.



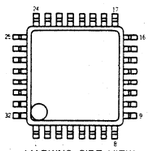
# SECTION 4
# DIAGRAMS

## 4-1. SEMICONDUCTOR LEAD LAYOUTS

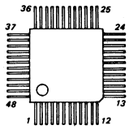
**BA10358F**
**NJM2903M**
**NJM4506M**



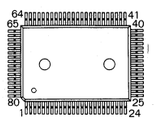

**CXA1271Q**



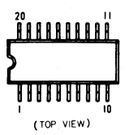

**CXA1272Q**



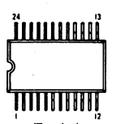
**CXD1130Q**



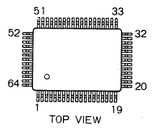

**CXD1161M-3**



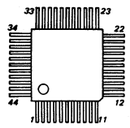

**CXK5816M-10L**
**M51568FP**



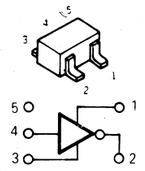

**CXP5024-063Q**




**MPC1715FU**

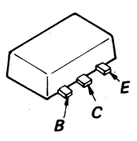


**TC7S04F**

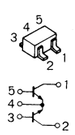


**2SA812**
**2SB815**
**2SC2712**
**2SD596**
**DTA124EK**
**DTA144TK**
**DTC114TK**
**DTC144TK**

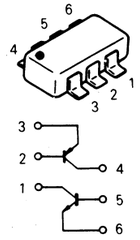
**2SB1120**
**2SD999**



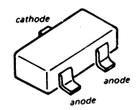
**FMW1**



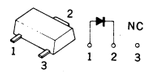
**IMD3**



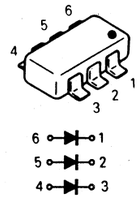
**1S2837**



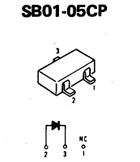

**E10QS04**



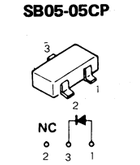

**IMN10**



**RD5.6M-B2**
**RD7.5M-B1**
**RD10M-B2**
**RD12M-B2**
**SB01-05CP**



**SB05-05CP**




**Note on Printed Wiring Boards:**

- ○—— : parts extracted from the component side.
- ●—— : parts extracted from the conductor side.
- ■ : parts mounted on the conductor side.
- ⊗ : Through hole.
- ▒▒ : Pattern on the side which is seen.
- ▒▒ : Pattern of the rear side.
- ⊗—⊗ : Through hole to SIDE A and SIDE B indicate to jointed number and connection.

**Note on Schematic Diagram:**

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- % : indicates tolerance.

| **Note:** | **Note:** |
|---|---|
| The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified. | Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié. |

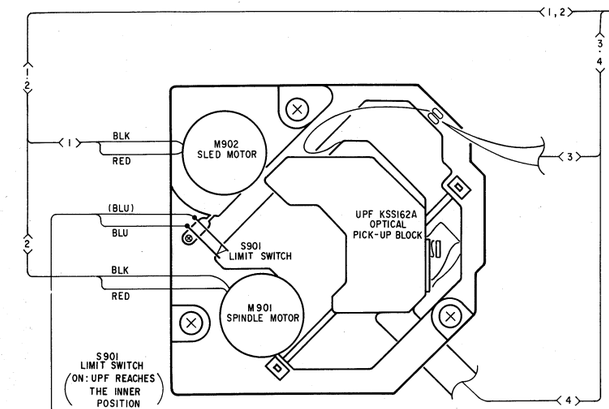
- Switch

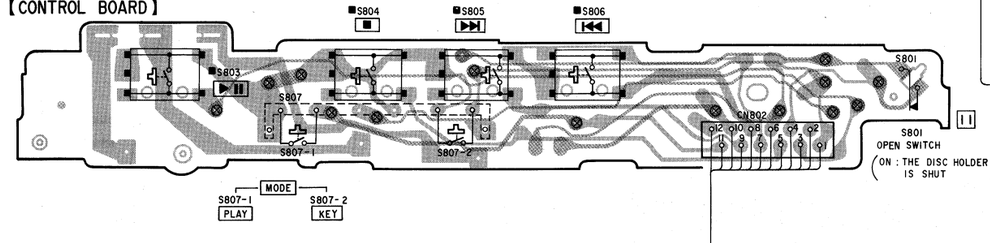
| Ref. No. | Switch | Position |
|---|---|---|
| S401 | HOLD | OFF |
| S801 | OPEN SWITCH | ON |
| S803 | ▶II | OFF |
| S804 | ■ | OFF |
| S805 | ▶▶ | OFF |
| S806 | ◀◀ | OFF |
| S807-1 | PLAY MODE | OFF |
| S807-2 | KEY MODE | OFF |
| S901 | LIMIT SWITCH | OFF |

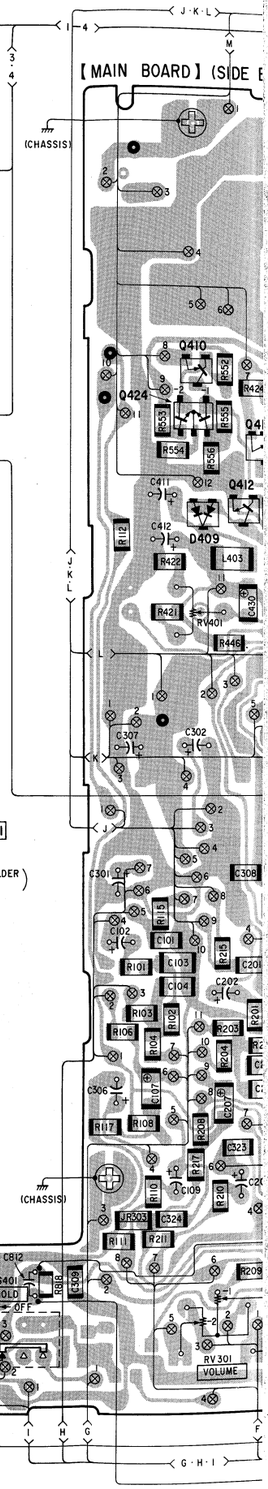
- ▬▬ : B+ Line
- ▭ : adjustment for repair.
- Power voltage is dc 9V and fed with regulated dc power supply from external power voltage jack.
- Voltage and waveforms are dc with respect to ground in service mode. (See page 5 for set up of service mode.)
  no mark : STOP Conditions
  ( ) : PLAY Conditions
- Voltages are taken with a VOM (50 kΩ/V).
  Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope.
  Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : CD

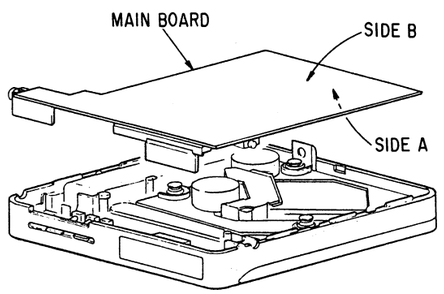


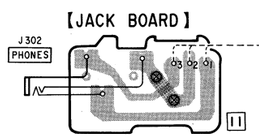
## 4-2. PRINTED WIRING BOARDS



【MAIN BOARD】(SIDE B)

【MAIN BOARD】(SIDE A)

## ● Semiconductor Location

| Ref. No. | Location | Ref. No. | Location |
|---|---|---|---|
| D401 | B-12 | Q302 | J-22 |
| D402 | C-12 | Q303 | J-23 |
| D409 | E-9 | Q304 | I-11 |
| D418 | J-23 | Q305 | I-11 |
| D501 | B-18 | Q409 | E-11 |
| D502 | B-18 | Q410 | C-9 |
| D503 | B-18 | Q412 | D-10 |
| D504 | B-18 | Q413 | D-10 |
| D505 | F-19 | Q414 | D-10 |
| D507 | G-13 | Q423 | D-21 |
| D601 | E-12 | Q424 | D-9 |
| D801 | I-18 | Q451 | D-21 |
| D803 | I-18 | Q452 | D-21 |
| D804 | J-14 | Q453 | C-10 |
| D805 | I-14 | Q501 | F-17 |
| D806 | J-19 | Q502 | F-17 |
| D807 | I-17 | Q503 | H-18 |
| | | Q504 | H-13 |
| IC301 | F-22 | Q506 | G-12 |
| IC302 | I-22 | Q507 | J-11 |
| IC303 | H-21 | | |
| IC501 | G-17 | Q801 | I-17 |
| IC502 | G-19 | Q802 | K-14 |
| | | Q803 | J-10 |
| IC503 | F-14 | | |
| IC504 | C-18 | | |
| ID505 | B-19 | | |
| IC601 | E-18 | | |
| IC602 | D-14 | | |
| IC801 | I-13 | | |
| IC802 | I-19 | | |

## 4-3. SCHEMATIC DIAGRAM

【MAIN BOARD】

OPTICAL PICK-UP BLOCK KSS-162A(1/2)

DETECTOR

LASER DIODE

CN501

IC501 CXA1271Q RF AMP

IC502 CXA1272Q SERVO AMP

IC503 BA10358F LOW-PASS FILTER

IC504 MPC1715FU PWM DRIVER

IC505 TC7S04F INVERTER

IC802 NJM2903M POWER DET

Q501,502 AUTOMATIC POWER CONTROL

Q502 2SD1048

Q501 2SA1162

Q503 DTC114TK SWITCHING

Q504 2SC2712 SWITCHING

Q506 DTA144TK CLV DRIVE SWITCH

EF BALANCE

FOCUS BIAS

FOCUS GAIN

TRACKING GAIN

PLL FREE RUN

(ON : UPF REACHES THE INNER POSITION)

S901 LIMIT SWITCH

OPTICAL PICK-UP BLOCK KSS-162A (1/2)

CN502

TRACKING COIL

FOCUS COIL

M901 SPINDLE MOTOR

M902 SLED MOTOR

CNJ401 DC IN 9V

DRY BATTERY SIZE "AA" (IEC DESIGNATION R6) 4PCS. 6V

Q453 2SD999 REG

Q451 2SD999 REG

Q452 2SD999 REG

Q409 2SA1162 REG

Q412 2SD1048 REG

Q413 2SB1120 B+ SWITCH

Q423 IMD3T109 B+ SWITCH

Q410 2SB624 B+ SWITCH

Q414 FMW1 B+ SWITCH

Q424 FMW1 B+ SWITCH

D401 E10QS03

D402 RD7.5M

D409 SB05-05

D501 SB01-05

D502 SB01-05

D503 SB01-05

D504 RD10M

D505 1S2837

D507 1S2837

TOTAL CURRENT

- STOP : 190mA
- DURING FOCUS SEARCH: 270mA
- CLVS (CLV RUN UP MODE) :260-320mA
- PLAY : APPROX 200mA

12 13 14 15 16 17 18 19 20 21 22 23

A B C D E F G H I J K L M N O

IC601
CXD1130Q
SIGNAL PROCESSOR

IC602
LC3516AML-15
RAM

IC301
CXD1161M
D/A CONVERTER

IC303
NJM4560M
AUDIO AMP

IC302
M51568F
AUDIO AMP

IC801
CXP5024-063Q
SYSTEM CONTROL
/LCD DRIVE

X601 16.9344MHz

X801 3.58MHz

RV301
VOLUME

【JACK BOARD】

【CONTROL BOARD】

LCD1
LCD MODULE

## 4-4. WAVE FORMS

**1**
PLAY :
0V
APPROX. 300mVp-p

**2**
PLAY :
3.1V
2.1V
0V
1Vp-p

**3**
PLAY :
0V
APPROX. 600mVp-p

**4**
DURING FOCUS SEARCH
2 SEC
1V
1.4Vp-p

**5**
5.6 µSEC
3.6Vp-p

**6**
12µSEC
3.6Vp-p

**7**
240nSEC
3.4Vp-p

**8**
7µSEC
3.6Vp-p

**9**
120nSEC
1.5Vp-p

**10**
120nSEC
1.25Vp-p

**11**
60nSEC
2.5Vp-p

**12**
60nSEC
2Vp-p

**13**
280nSEC
3.6Vp-p

**14**
280nSEC
4Vp-p

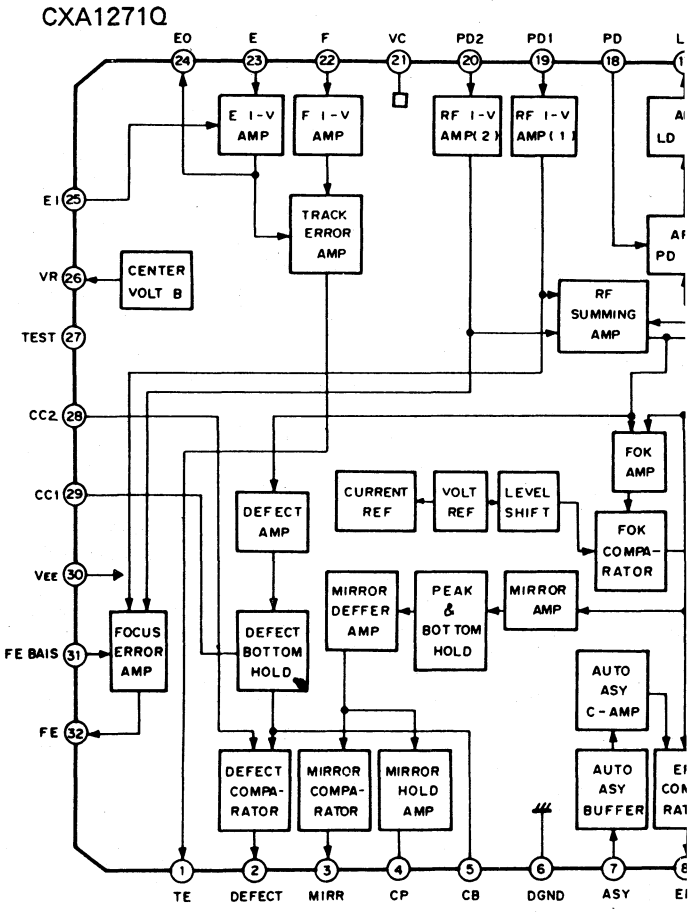
**15**
8mSEC
5V
0V

**16**
8mSEC
5V
0V

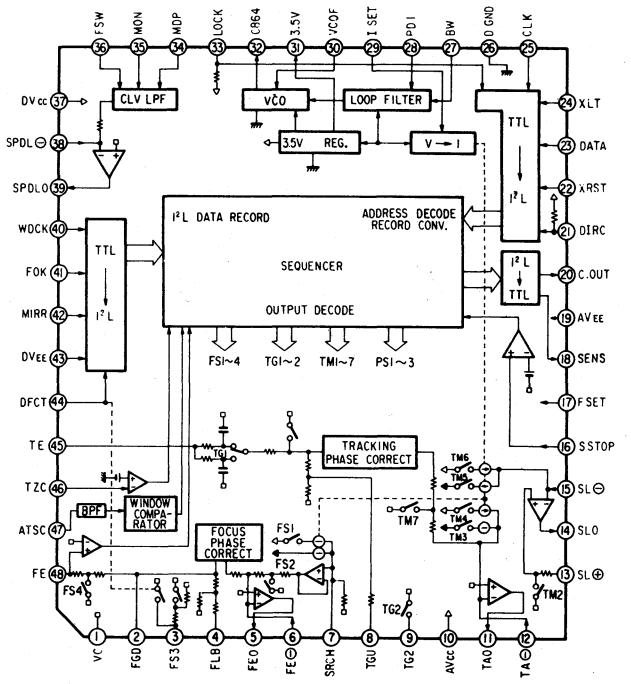


## 4-5. IC BLOCK DIAGRAM

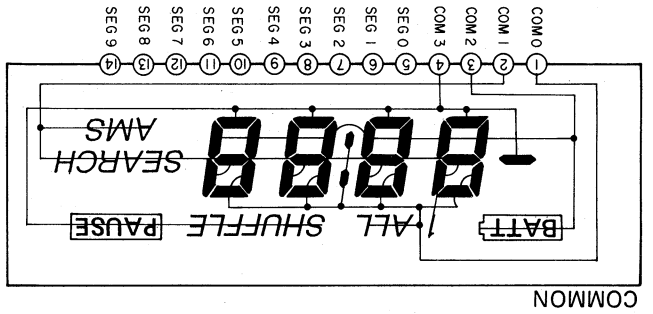
IC501
CXA1271Q

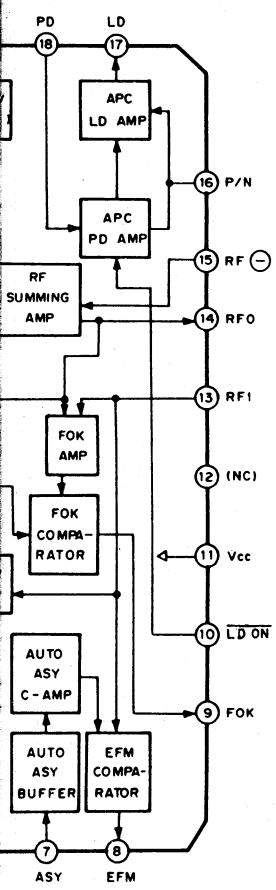


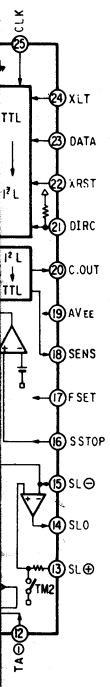

IC502
CXA1272Q-Z



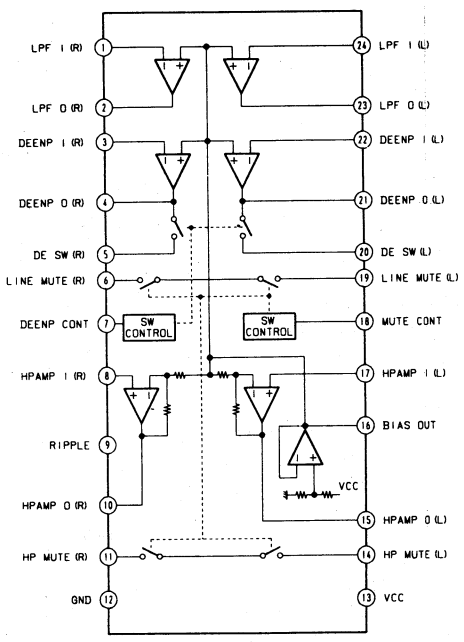
## 4-6. LCD MODULE



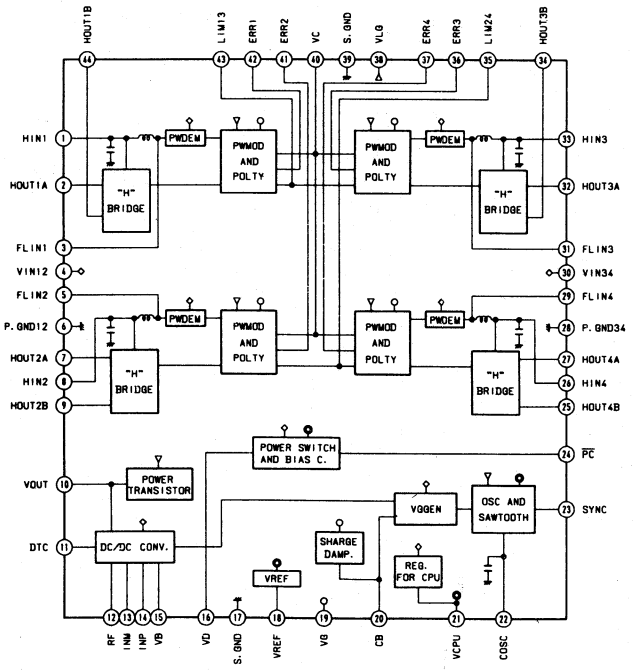



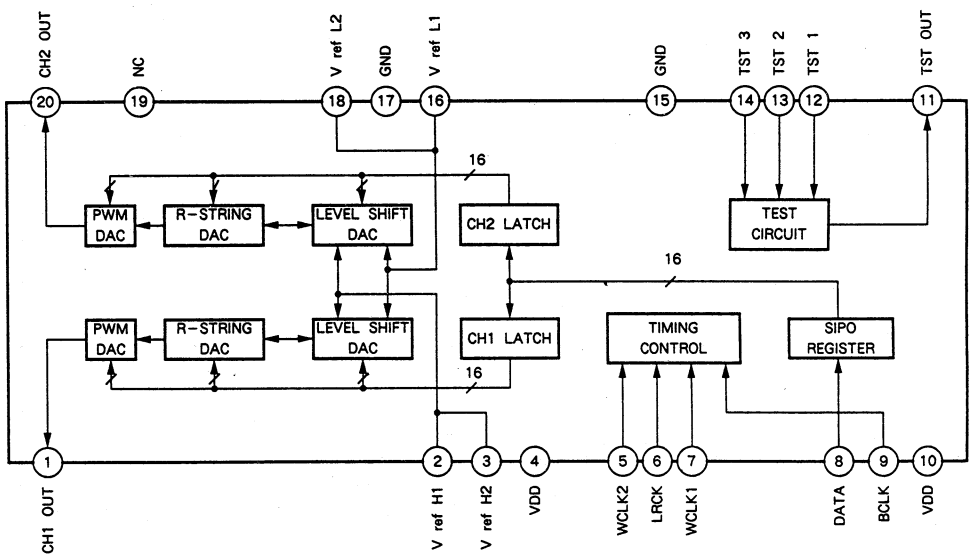

### IC302
### M51568FP



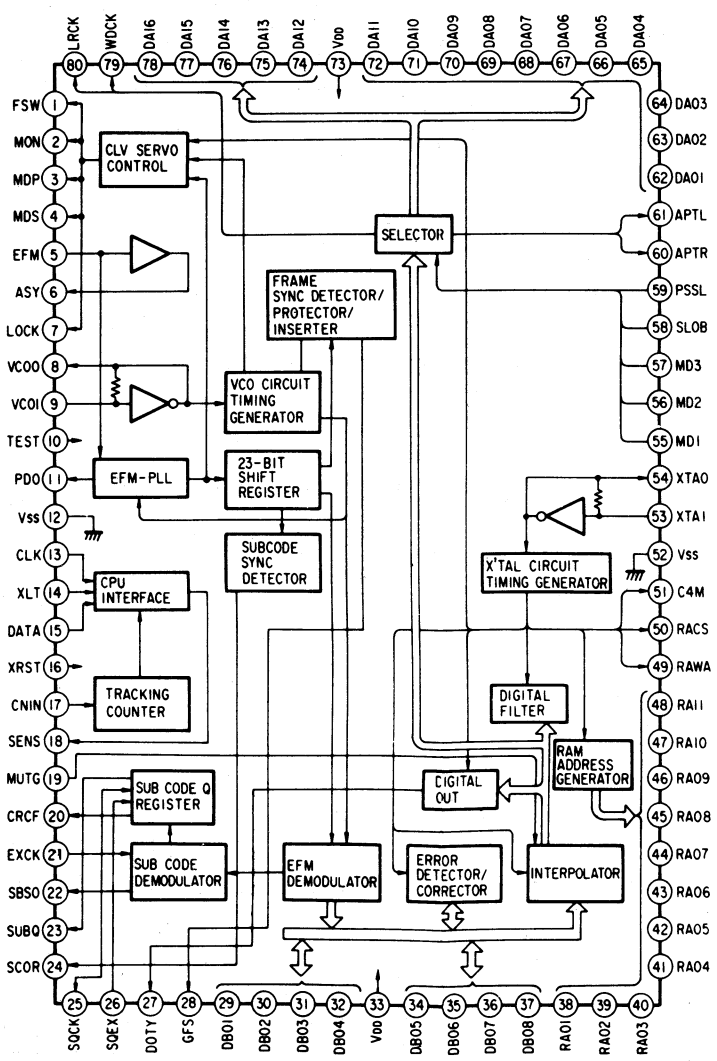

### IC504
### MPC1715




### IC301
### CXD1161M




### IC601
### CXD1130Q



# SECTION 5
# EXPLODED VIEWS

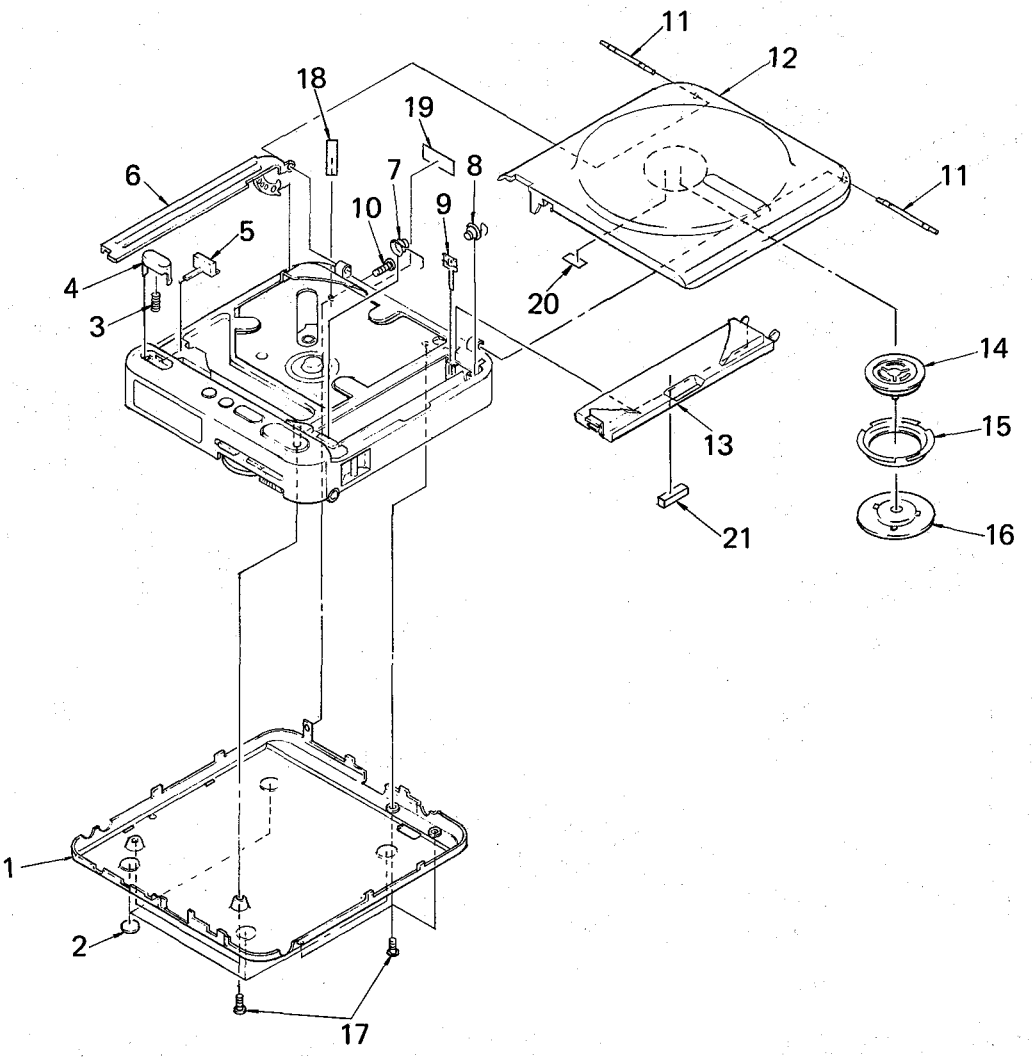
**NOTE:**

- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- Color Indication of Appearance Parts
  Example:
  (RED) ... KNOB, BALANCE (WHITE)
  ↑ ↑
  Cabinet's Color Parts' Color

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

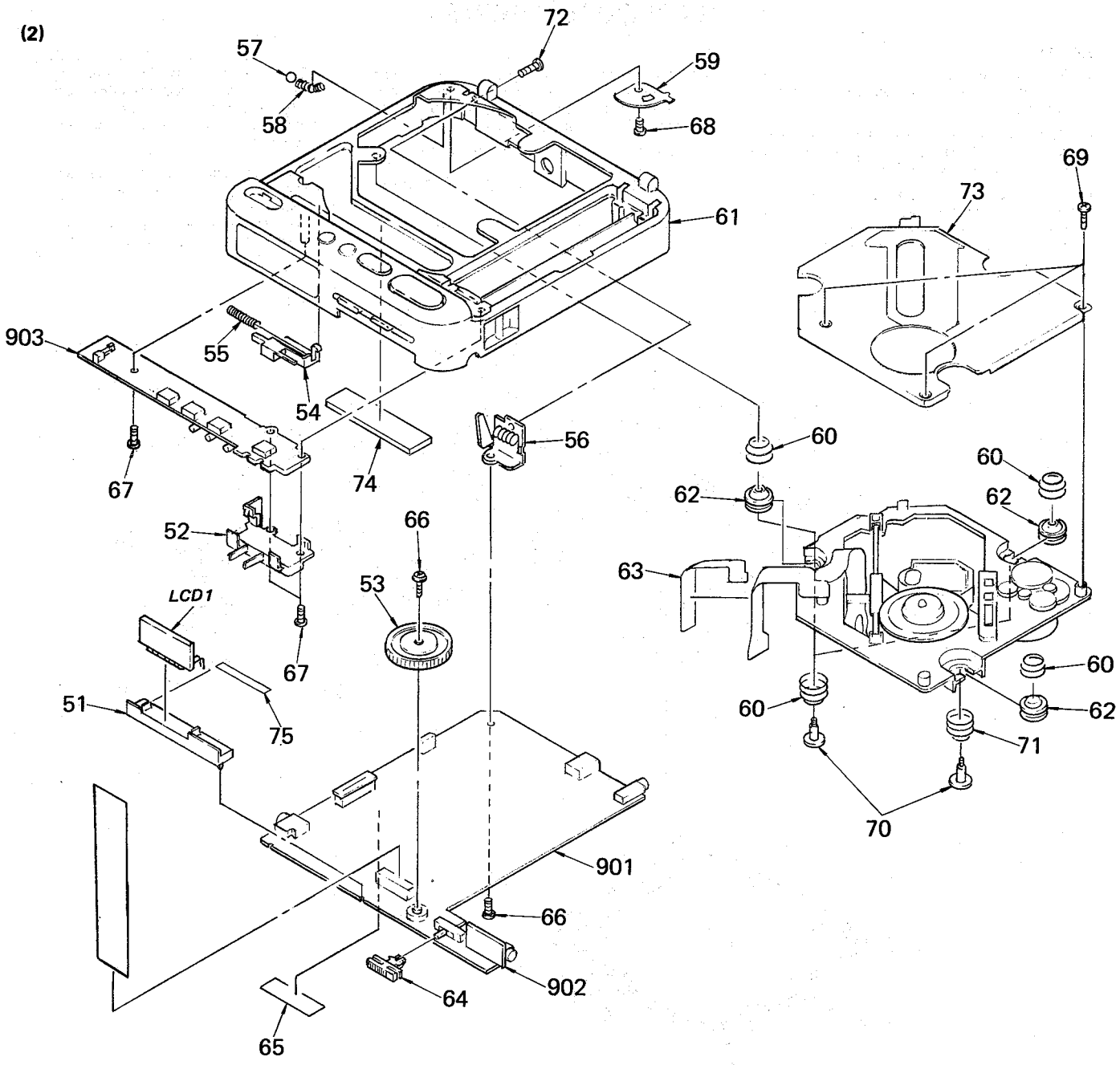
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

**(1)**




| No. | Part No. | Description | Remarks |
|---|---|---|---|
| 1 | X-4924-724-1 | (BLACK)...PANEL ASSY, BOTTOM | |
| | X-4924-725-1 | (WHITE)...PANEL ASSY (W), BOTTOM | |
| 2 | 4-912-641-11 | FOOT, RUBBER | |
| 3 | 4-926-634-01 | SPRING, COMPRESSION | |
| 4 | 4-926-617-01 | (BLACK)...BUTTON (OPEN) | |
| | 4-926-617-11 | (WHITE)...BUTTON (OPEN) | |
| 5 | 4-926-618-01 | KNOB (SAFETY) | |
| 6 | 4-926-611-01 | ARM, SWITCHING | |
| 7 | 2-298-630-01 | SPRING (RIGHT) | |
| 8 | 4-926-627-01 | SPRING (A) | |
| 9 | 3-881-922-11 | BOARD, TERMINAL | |
| 10 | 3-703-816-51 | (BLACK)...SCREW (M1.4X3.5), SPECIAL HEAD | |
| | 3-703-816-52 | (WHITE)...SCREW (M1.4X3.5), SPECIAL HEAD | |
| 11 | 4-926-626-01 | SHAFT, FULCRUM | |
| 12 | X-4924-722-1 | (BLACK)...LID ASSY, UPPER | |
| | X-4924-727-1 | (WHITE)...LID ASSY (W), UPPER | |
| 13 | 4-926-619-01 | (BLACK)...LID, BATTERY CASE | |
| | 4-926-619-11 | (WHITE)...LID, BATTERY CASE | |
| 14 | 4-926-608-01 | PLATE (M), CHUCK | |
| 15 | 4-926-609-01 | RETAINER, CHUCK PLATE | |
| 16 | A-3039-708-A | PLATE ASSY, CHUCK | |
| 17 | 4-908-792-61 | (WHITE)...SCREW (B2X6), TAPPING, P1 | |
| | 4-908-792-71 | (BLACK)...SCREW (B2X6), TAPPING, P1 | |
| 18 | 4-908-711-03 | (BLACK).....LABEL CAUTION, LENS | |
| | 4-908-711-13 | (WHITE).....LABEL CAUTION, LENS | |
| 19 | *4-926-655-01 | (D-20: BLACK).....LABEL MODEL, NUMBER (UK) | |
| | *4-926-655-11 | (D-20: WHITE).....LABEL MODEL, NUMBER (UK) | |
| 20 | 3-682-518-00 | CUSHION | |
| 21 | *4-908-075-21 | CUSHION | |

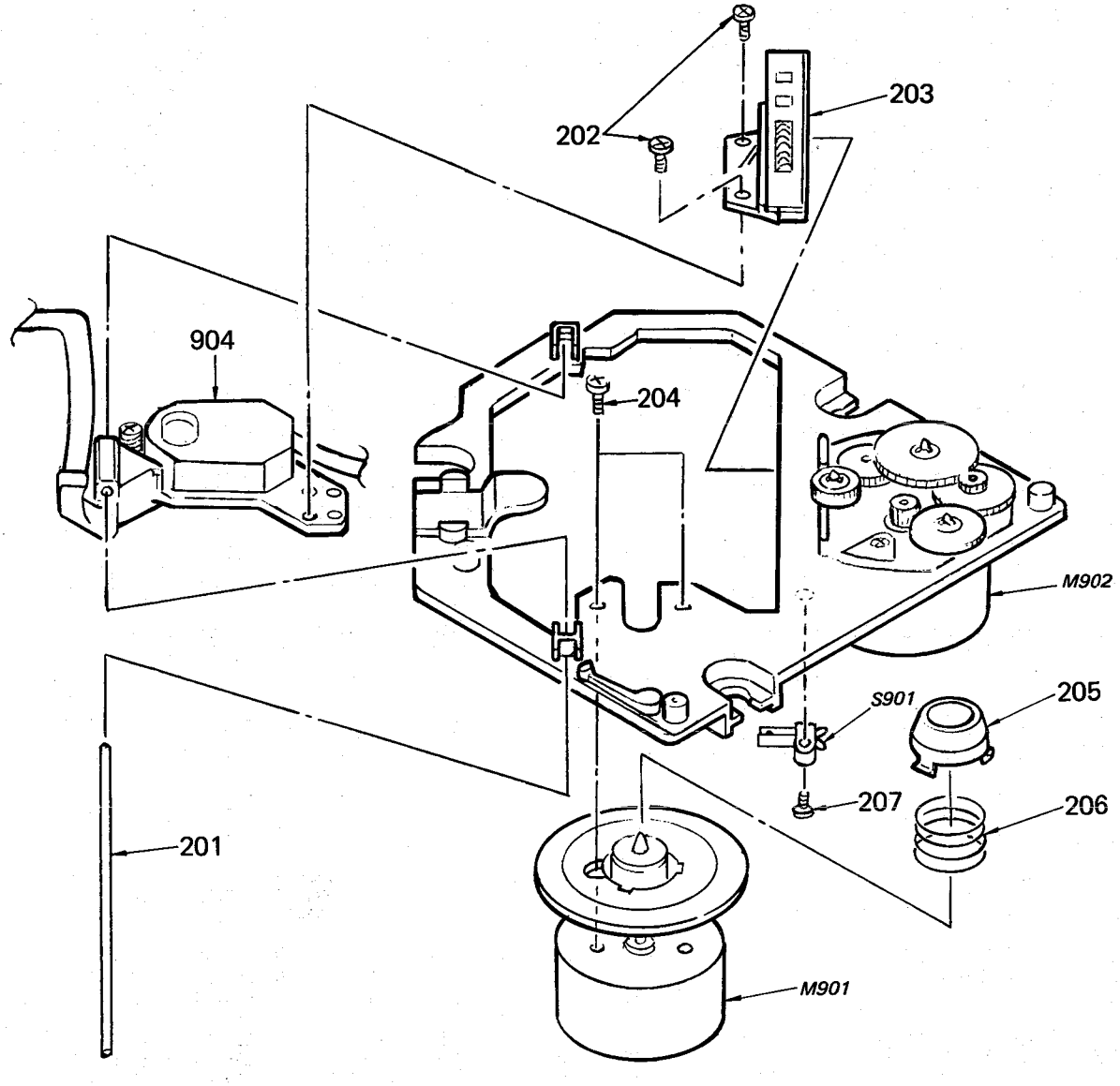
(2)




| No. | Part No. | Description | Remarks |
|---|---|---|---|
| 51 | *4-926-610-01 | HOLDER, LCD | |
| 52 | 4-926-636-01 | SUPPORT, JACK | |
| 53 | 4-924-732-01 | KNOB (VOLUME) | |
| 54 | 4-926-613-01 | CLAW, LID LOCK | |
| 55 | 4-926-635-01 | SPRING, COMPRESSION | |
| 56 | *X-4924-723-1 | SPRING ASSY | |
| 57 | 7-671-113-02 | STEEL BALL 3.0 | |
| 58 | 4-926-633-01 | SPRING, COMPRESSION | |
| 59 | 4-926-612-01 | RETAINER, BALL | |
| 60 | 4-924-710-01 | SPRING, COMPRESSION | |
| 61 | X-4924-721-1 | (BLACK)...CABINET ASSY | |
| | X-4924-726-1 | (WHITE)...CABINET ASSY (W) | |
| 62 | 4-924-705-01 | INSULATOR | |
| 63 | *4-924-761-01 | SHEET, PROTECTION | |
| 64 | 4-924-724-01 | KNOB (HOLD) | |
| 65 | 3-831-441-XX | CUSHION, SPEAKER | |
| 66 | 3-335-797-21 | SCREW (M1.4X3), TOOTHED LOCK | |

| No. | Part No. | Description | Remarks |
|---|---|---|---|
| 67 | 4-908-792-61 | (WHITE)...SCREW (B2X6), TAPPING, P1 | |
| | 4-908-792-71 | (BLACK)...SCREW (B2X6), TAPPING, P1 | |
| 68 | 4-908-792-01 | SCREW (B2X3), TAPPING, P1 | |
| 69 | 3-893-942-01 | (BLACK)...SCREW (1.7X4), TAPPING (B) | |
| | 3-893-942-31 | (WHITE)...SCREW (1.7X4), TAPPING (B) | |
| 70 | 4-926-718-01 | SCREW | |
| 71 | 4-926-659-01 | SPRING, COMPRESSION | |
| 72 | 3-331-047-07 | (BLACK)...SCREW (M1.4X5.5), SPECIAL HEAD | |
| | 3-331-047-08 | (WHITE)...SCREW (M1.4X5.5), SPECIAL HEAD | |
| 73 | 4-924-735-01 | (BLACK)...COVER, MD | |
| | 4-924-735-11 | (WHITE)...COVER, MD | |
| 74 | *4-924-789-01 | SHEET, BLIND | |
| 75 | 4-926-657-11 | PLATE, FIXED, LCD | |
| 901 | A-3015-671-A | PC BOARD ASSY, MAIN | |
| 902 | *1-627-307-11 | PC BOARD, JACK | |
| 903 | *1-627-305-11 | PC BOARD, CONTROL | |
| LCD1 | 1-808-443-11 | DISPLAY PANEL, LIQUID CRYSTAL | |

### (3) MECHANISM SECTION (KSM-162AAN)




| No. | Part No. | Description | Remarks |
|---|---|---|---|
| 201 | 2-641-534-01 | SHAFT | |
| 202 | 7-627-852-18 | SCREW, PRECISION +P 1.7X4 TYPE3 | |
| 203 | X-2641-523-1 | RACK ASSY | |
| 204 | 7-627-552-88 | SCREW, PRECISION +P 1.7X2.2 | |
| 205 | 2-641-539-01 | RING, CENTER | |
| 206 | 2-641-524-01 | SPRING (A), COMPRESSION | |
| 207 | 7-685-103-19 | SCREW +P 2X5 TYPE2 NON-SLIT | |
| 904 | ⚠8-848-081-21 | PICKUP, OPTICAL KSS-162A | |
| M901 | X-2641-521-1 | MOTOR ASSY, T.T. | |
| M902 | X-2641-525-1 | MOTOR ASSY | |
| S901 | 1-570-112-11 | SWITCH, LEAF (LIMIT SWITCH) | |

**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

**Note:**
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

# SECTION 6
# ELECTRICAL PARTS LIST

**NOTE:**

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF: μF, PF: μμF.

RESISTORS
- All resistors are in ohms.
- F: nonflammable

COILS
- MMH: mH, UH: μH

SEMICONDUCTORS
In each case, U: μ, for example:
UA...: μA..., UPA...: μPA..., UPC...: μPC, UPD...: μPD...

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

| Ref.No. | Part No. | Description | | | |
|---|---|---|---|---|---|
| 901 | A-3015-671-A | PC BOARD ASSY, MAIN | | | |
| 902 | *1-627-307-11 | PC BOARD, JACK | | | |
| 903 | *1-627-305-11 | PC BOARD, CONTROL | | | |
| 904 | ⚠8-848-081-21 | DEVICE, OPTICAL KSS-162A | | | |
| C101 | 1-163-086-00 | CERAMIC CHIP 3PF | 0.25PF | | 50V |
| C102 | 1-126-157-11 | ELECT 10MF | 20% | | 16V |
| C103 | 1-163-212-00 | CERAMIC CHIP 0.002MF | 5% | | 50V |
| C104 | 1-163-205-00 | CERAMIC CHIP 0.001MF | 5% | | 50V |
| C105 | 1-163-111-00 | CERAMIC CHIP 56PF | 5% | | 50V |
| C106 | 1-163-013-00 | CERAMIC CHIP 0.0022MF | 10% | | 50V |
| C107 | 1-135-099-00 | TANTAL. CHIP 2.2MF | 20% | | 6.3V |
| C108 | 1-135-099-00 | TANTAL. CHIP 2.2MF | 20% | | 6.3V |
| C109 | 1-124-584-00 | ELECT 100MF | 20% | | 10V |
| C110 | 1-163-117-00 | CERAMIC CHIP 100PF | 5% | | 50V |
| C111 | 1-163-117-00 | CERAMIC CHIP 100PF | 5% | | 50V |
| C201 | 1-163-086-00 | CERAMIC CHIP 3PF | 0.25PF | | 50V |
| C202 | 1-126-157-11 | ELECT 10MF | 20% | | 16V |
| C203 | 1-163-212-00 | CERAMIC CHIP 0.002MF | 5% | | 50V |
| C204 | 1-163-205-00 | CERAMIC CHIP 0.001MF | 5% | | 50V |
| C205 | 1-163-111-00 | CERAMIC CHIP 56PF | 5% | | 50V |
| C206 | 1-163-013-00 | CERAMIC CHIP 0.0022MF | 10% | | 50V |
| C207 | 1-135-099-00 | TANTAL. CHIP 2.2MF | 20% | | 6.3V |
| C208 | 1-135-099-00 | TANTAL. CHIP 2.2MF | 20% | | 6.3V |
| C209 | 1-124-584-00 | ELECT 100MF | 20% | | 10V |
| C210 | 1-163-117-00 | CERAMIC CHIP 100PF | 5% | | 50V |
| C211 | 1-163-117-00 | CERAMIC CHIP 100PF | 5% | | 50V |
| C301 | 1-124-584-00 | ELECT 100MF | 20% | | 10V |
| C302 | 1-124-584-00 | ELECT 100MF | 20% | | 10V |
| C303 | 1-163-141-00 | CERAMIC CHIP 0.001MF | 5% | | 50V |
| C305 | 1-126-157-11 | ELECT 10MF | 20% | | 16V |
| C306 | 1-124-584-00 | ELECT 100MF | 20% | | 10V |
| C307 | 1-124-584-00 | ELECT 100MF | 20% | | 10V |
| C308 | 1-163-038-00 | CERAMIC CHIP 0.1MF | | | 25V |
| C309 | 1-163-141-00 | CERAMIC CHIP 0.001MF | 10% | | 50V |
| C323 | 1-163-021-00 | CERAMIC CHIP 0.01MF | 10% | | 50V |
| C324 | 1-163-021-00 | CERAMIC CHIP 0.01MF | 10% | | 50V |
| C401 | 1-163-021-00 | CERAMIC CHIP 0.01MF | 10% | | 50V |
| C402 | 1-163-021-00 | CERAMIC CHIP 0.01MF | 10% | | 50V |
| C403 | 1-126-357-11 | ELECT 150MF | 20% | | 16V |
| C406 | 1-124-584-00 | ELECT 100MF | 20% | | 10V |
| C411 | 1-126-157-11 | ELECT 10MF | 20% | | 16V |
| C412 | 1-126-094-11 | ELECT 4.7MF | 20% | | 16V |
| C414 | 1-126-157-11 | ELECT 10MF | 20% | | 16V |
| C430 | 1-135-099-00 | TANTAL. CHIP 2.2MF | 20% | | 6.3V |
| C450 | 1-124-257-00 | ELECT 2.2MF | 20% | | 16V |
| C501 | 1-163-038-00 | CERAMIC CHIP 0.1MF | | | 25V |
| C502 | 1-163-021-00 | CERAMIC CHIP 0.01MF | 10% | | 50V |
| C503 | 1-124-431-00 | ELECT 33MF | 20% | | 4V |
| C505 | 1-163-078-11 | CERAMIC CHIP 0.033MF | 10% | | 25V |
| C506 | 1-163-021-00 | CERAMIC CHIP 0.01MF | 10% | | 50V |
| C507 | 1-135-070-00 | TANTAL. CHIP 0.1MF | 20% | | 35V |
| C508 | 1-163-038-00 | CERAMIC CHIP 0.1MF | | | 25V |
| C509 | 1-124-431-00 | ELECT 33MF | 20% | | 4V |
| C510 | 1-163-038-00 | CERAMIC CHIP 0.1MF | | | 25V |
| C511 | 1-163-021-00 | CERAMIC CHIP 0.01MF | 10% | | 50V |
| C512 | 1-124-584-00 | ELECT 100MF | 20% | | 10V |
| C513 | 1-124-431-00 | ELECT 33MF | 20% | | 4V |
| C514 | 1-163-095-00 | CERAMIC CHIP 12PF | 5% | | 50V |
| C515 | 1-163-117-00 | CERAMIC CHIP 100PF | 5% | | 50V |
| C516 | 1-163-038-00 | CERAMIC CHIP 0.1MF | | | 25V |
| C517 | 1-163-038-00 | CERAMIC CHIP 0.1MF | | | 25V |
| C518 | 1-163-021-00 | CERAMIC CHIP 0.01MF | 10% | | 50V |
| C519 | 1-163-038-00 | CERAMIC CHIP 0.1MF | | | 25V |
| C520 | 1-163-037-11 | CERAMIC CHIP 0.022MF | 10% | | 25V |
| C521 | 1-163-117-00 | CERAMIC CHIP 100PF | 5% | | 50V |
| C522 | 1-124-239-00 | ELECT 6.8MF | 20% | | 25V |
| C523 | 1-124-239-00 | ELECT 6.8MF | 20% | | 25V |
| C524 | 1-126-153-11 | ELECT 22MF | 20% | | 6.3V |
| C525 | 1-163-038-00 | CERAMIC CHIP 0.1MF | | | 25V |
| C527 | 1-163-081-00 | CERAMIC CHIP 0.22MF | | | 25V |
| C528 | 1-126-153-11 | ELECT 22MF | 20% | | 6.3V |
| C529 | 1-163-125-00 | CERAMIC CHIP 220PF | 5% | | 50V |
| C531 | 1-163-038-00 | CERAMIC CHIP 0.1MF | | | 25V |
| C532 | 1-163-038-00 | CERAMIC CHIP 0.1MF | | | 25V |
| C533 | 1-162-638-11 | CERAMIC CHIP 1MF | | | 16V |
| C534 | 1-163-038-00 | CERAMIC CHIP 0.1MF | | | 25V |
| C535 | 1-163-141-00 | CERAMIC CHIP 0.001MF | 10% | | 50V |
| C536 | 1-163-078-11 | CERAMIC CHIP 0.033MF | 10% | | 25V |
| C537 | 1-135-145-11 | TANTAL. CHIP 0.47MF | 20% | | 25V |
| C538 | 1-124-434-00 | ELECT 220MF | 20% | | 4V |
| C539 | 1-163-141-00 | CERAMIC CHIP 0.001MF | 10% | | 50V |
| C540 | 1-162-637-11 | CERAMIC CHIP 0.47MF | | | 16V |
| C543 | 1-124-255-00 | ELECT 1MF | 20% | | 50V |
| C544 | 1-126-157-11 | ELECT 10MF | 20% | | 16V |
| C546 | 1-163-986-00 | CERAMIC CHIP 0.027MF | 10% | | 25V |
| C547 | 1-162-638-11 | CERAMIC CHIP 1MF | | | 16V |
| C548 | 1-126-162-11 | ELECT 3.3MF | 20% | | 50V |
| C549 | 1-126-157-11 | ELECT 10MF | 20% | | 16V |
| C550 | 1-163-141-00 | CERAMIC CHIP 0.001MF | 5% | | 50V |
| C551 | 1-126-157-11 | ELECT 10MF | 20% | | 16V |
| C552 | 1-124-255-00 | ELECT 1MF | 20% | | 50V |
| C553 | 1-162-638-11 | CERAMIC CHIP 1MF | | | 16V |

| Ref.No. | Part No. | Description | | |
|---|---|---|---|---|
| C554 | 1-162-637-11 | CERAMIC CHIP 0.47MF | | 16V |
| C555 | 1-163-081-00 | CERAMIC CHIP 0.22MF | | 25V |
| C556 | 1-163-143-00 | CERAMIC CHIP 0.0012MF | 10% | 50V |
| C557 | 1-163-017-00 | CERAMIC CHIP 0.0047MF | 10% | 50V |
| C558 | 1-163-038-00 | CERAMIC CHIP 0.1MF | | 25V |
| C559 | 1-124-584-00 | ELECT 100MF | 20% | 10V |
| C561 | 1-163-038-00 | CERAMIC CHIP 0.1MF | | 25V |
| C562 | 1-162-638-11 | CERAMIC CHIP 1MF | | 16V |
| C601 | 1-163-038-00 | CERAMIC CHIP 0.1MF | | 25V |
| C602 | 1-163-101-00 | CERAMIC CHIP 22PF | 5% | 50V |
| C603 | 1-163-101-00 | CERAMIC CHIP 22PF | 5% | 50V |
| C604 | 1-163-038-00 | CERAMIC CHIP 0.1MF | | 25V |
| C605 | 1-162-638-11 | CERAMIC CHIP 1MF | | 16V |
| C606 | 1-163-117-00 | CERAMIC CHIP 100PF | 5% | 50V |
| C607 | 1-163-037-11 | CERAMIC CHIP 0.022MF | 10% | 25V |
| C801 | 1-163-141-00 | CERAMIC CHIP 0.001MF | 5% | 50V |
| C802 | 1-163-038-00 | CERAMIC CHIP 0.1MF | | 25V |
| C803 | 1-135-099-00 | TANTAL. CHIP 2.2MF | 20% | 6.3V |
| C804 | 1-124-257-00 | ELECT 2.2MF | 20% | 50V |
| C805 | 1-163-113-00 | CERAMIC CHIP 68PF | 5% | 50V |
| C806 | 1-163-113-00 | CERAMIC CHIP 68PF | 5% | 50V |
| C807 | 1-163-021-00 | CERAMIC CHIP 0.01MF | 10% | 50V |
| C808 | 1-162-638-11 | CERAMIC CHIP 1MF | | 16V |
| C809 | 1-135-092-21 | TANTAL. CHIP 3.3MF | 20% | 16V |
| C810 | 1-162-638-11 | CERAMIC CHIP 1MF | | 16V |
| C811 | 1-163-038-00 | CERAMIC CHIP 0.1MF | | 25V |
| C812 | 1-126-157-11 | ELECT 10MF | 20% | 16V |
| CN501 | 1-566-976-11 | SOCKET, CONNECTOR 12P | | |
| CN502 | 1-565-309-11 | CONNECTOR, FLEXIBLE 4P | | |
| CN801 | 1-563-589-11 | CONNECTOR, FLEXIBLE 12P | | |
| CN802 | 1-563-615-11 | CONNECTOR, FLEXIBLE 12P | | |
| CNJ401 | 1-562-961-11 | JACK (DC IN 9V) | | |
| D401 | 8-719-200-36 | DIODE E10QS04 | | |
| D402 | 8-719-106-22 | DIODE RD7.5M-B1 | | |
| D409 | 8-719-938-75 | DIODE SB05-05CP | | |
| D418 | 8-719-105-91 | DIODE RD5.6M-B2 | | |
| D501 | 8-719-938-72 | DIODE SB01-05CP | | |
| D502 | 8-719-938-72 | DIODE SB01-05CP | | |
| D503 | 8-719-938-72 | DIODE SB01-05CP | | |
| D504 | 8-719-106-53 | DIODE RD10M-B2 | | |
| D505 | 8-719-100-05 | DIODE 1S2837 | | |
| D507 | 8-719-100-05 | DIODE 1S2837 | | |
| D601 | 8-719-100-05 | DIODE 1S2837 | | |
| D801 | 8-719-951-22 | DIODE IMN10 | | |
| D803 | 8-719-951-22 | DIODE IMN10 | | |
| D804 | 8-719-100-05 | DIODE 1S2837 | | |
| D805 | 8-719-106-71 | DIODE RD12M-B2 | | |

| Ref.No. | Part No. | Description | | | |
|---|---|---|---|---|---|
| D806 | 8-719-100-05 | DIODE 1S2837 | | | |
| D807 | 8-719-100-05 | DIODE 1S2837 | | | |
| IC301 | 8-759-805-34 | IC CXD1161M-3 | | | |
| IC302 | 8-759-630-75 | IC M51568FP | | | |
| IC303 | 8-759-745-64 | IC NJM4560M | | | |
| IC501 | 8-752-033-55 | IC CXA1271Q | | | |
| IC502 | 8-752-033-54 | IC CXA1272Q-Z | | | |
| IC503 | 8-759-970-89 | IC BA10358F | | | |
| IC504 | 8-759-030-17 | IC MPC1715FU | | | |
| IC505 | 8-759-230-43 | IC TC7S04F | | | |
| IC601 | 8-759-947-03 | IC CXD1130Q | | | |
| IC602 | 8-752-320-44 | IC CXK5816M-10L | | | |
| IC801 | 8-752-806-14 | IC CXP5024-063Q | | | |
| IC802 | 8-759-700-07 | IC NJM2903M | | | |
| J301 | 1-565-310-11 | JACK (LINE OUT) | | | |
| J302 | 1-565-311-11 | JACK (PHONES) | | | |
| J801 | 1-562-870-31 | JACK (REMOTE) | | | |
| JR202 | 1-216-296-00 | METAL GLAZE | 0 | 5% | 1/8W |
| JR303 | 1-216-295-00 | METAL GLAZE | 0 | 5% | 1/10W |
| JR306 | 1-216-295-00 | METAL GLAZE | 0 | 5% | 1/10W |
| JR307 | 1-216-295-00 | METAL GLAZE | 0 | 5% | 1/10W |
| JR401 | 1-216-295-00 | METAL GLAZE | 0 | 5% | 1/10W |
| JR402 | 1-216-295-00 | METAL GLAZE | 0 | 5% | 1/10W |
| JR404 | 1-216-295-00 | METAL GLAZE | 0 | 5% | 1/10W |
| JR406 | 1-216-296-00 | METAL GLAZE | 0 | 5% | 1/8W |
| JR501 | 1-216-295-00 | METAL GLAZE | 0 | 5% | 1/10W |
| L402 | 1-412-038-11 | INDUCTOR CHIP 100UH | | | |
| L403 | 1-412-037-11 | INDUCTOR CHIP 47UH | | | |
| L501 | 1-412-036-11 | INDUCTOR CHIP 10UH | | | |
| L502 | 1-412-039-51 | INDUCTOR CHIP 100UH | | | |
| L503 | 1-412-038-11 | INDUCTOR CHIP 100UH | | | |
| L504 | 1-412-038-11 | INDUCTOR CHIP 100UH | | | |
| L505 | 1-412-039-51 | INDUCTOR CHIP 100UH | | | |
| L506 | 1-412-036-11 | INDUCTOR CHIP 10UH | | | |
| LCD1 | 1-808-443-11 | DISPLAY PANEL, LIQUID CRYSTAL | | | |
| M901 | X-2641-521-1 | MOTOR ASSY, T.T. | | | |
| M902 | X-2641-525-1 | MOTOR ASSY | | | |
| Q302 | 8-729-159-64 | TRANSISTOR 2SD596 | | | |
| Q303 | 8-729-159-64 | TRANSISTOR 2SD596 | | | |
| Q304 | 8-729-159-64 | TRANSISTOR 2SD596 | | | |
| Q305 | 8-729-159-64 | TRANSISTOR 2SD596 | | | |
| Q409 | 8-729-100-76 | TRANSISTOR 2SA812 | | | |
| Q410 | 8-729-800-68 | TRANSISTOR 2SB815 | | | |
| Q412 | 8-729-159-64 | TRANSISTOR 2SD596 | | | |
| Q413 | 8-729-806-75 | TRANSISTOR 2SB1120 | | | |
| Q414 | 8-729-903-10 | TRANSISTOR FMW1 | | | |

| Ref.No. | Part No. | Description | | | |
|---|---|---|---|---|---|
| Q423 | 8-729-907-28 | TRANSISTOR IMD3 | | | |
| Q424 | 8-729-903-10 | TRANSISTOR FMW1 | | | |
| Q451 | 8-729-199-92 | TRANSISTOR 2SD999 | | | |
| Q452 | 8-729-199-92 | TRANSISTOR 2SD999 | | | |
| Q453 | 8-729-199-92 | TRANSISTOR 2SD999 | | | |
| Q501 | 8-729-100-76 | TRANSISTOR 2SA812 | | | |
| Q502 | 8-729-159-64 | TRANSISTOR 2SD596 | | | |
| Q503 | 8-729-902-99 | TRANSISTOR DTC114TK | | | |
| Q504 | 8-729-271-23 | TRANSISTOR 2SC2712 | | | |
| Q506 | 8-729-903-29 | TRANSISTOR DTA144TK | | | |
| Q507 | 8-729-903-30 | TRANSISTOR DTC144TK | | | |
| Q801 | 8-729-901-05 | TRANSISTOR DTA124EK | | | |
| Q802 | 8-729-159-64 | TRANSISTOR 2SD596 | | | |
| Q803 | 8-729-907-28 | TRANSISTOR IMD3 | | | |
| R101 | 1-216-329-11 | METAL GLAZE | 5.1K | 1% | 1/10W |
| R102 | 1-216-336-11 | METAL GLAZE | 47K | 1% | 1/10W |
| R103 | 1-216-333-11 | METAL GLAZE | 15K | 1% | 1/10W |
| R104 | 1-218-160-11 | METAL GLAZE | 43K | 1% | 1/10W |
| R105 | 1-216-328-11 | METAL GLAZE | 4.3K | 1% | 1/10W |
| R106 | 1-216-333-11 | METAL GLAZE | 15K | 1% | 1/10W |
| R107 | 1-216-063-00 | METAL GLAZE | 3.9K | 5% | 1/10W |
| R108 | 1-216-053-00 | METAL GLAZE | 1.5K | 5% | 1/10W |
| R109 | 1-216-077-00 | METAL GLAZE | 15K | 5% | 1/10W |
| R110 | 1-216-009-00 | METAL GLAZE | 22 | 5% | 1/10W |
| R111 | 1-216-073-00 | METAL GLAZE | 10K | 5% | 1/10W |
| R112 | 1-216-033-00 | METAL GLAZE | 220 | 5% | 1/10W |
| R114 | 1-216-053-00 | METAL GLAZE | 1.5K | 5% | 1/10W |
| R115 | 1-216-073-00 | METAL GLAZE | 10K | 5% | 1/10W |
| R116 | 1-216-097-00 | METAL GLAZE | 100K | 5% | 1/10W |
| R117 | 1-216-073-00 | METAL GLAZE | 10K | 5% | 1/10W |
| R201 | 1-216-329-11 | METAL GLAZE | 5.1K | 1% | 1/10W |
| R202 | 1-216-336-11 | METAL GLAZE | 47K | 1% | 1/10W |
| R203 | 1-216-333-11 | METAL GLAZE | 15K | 1% | 1/10W |
| R204 | 1-218-160-11 | METAL GLAZE | 43K | 1% | 1/10W |
| R205 | 1-216-328-11 | METAL GLAZE | 4.3K | 1% | 1/10W |
| R206 | 1-216-333-11 | METAL GLAZE | 15K | 1% | 1/10W |
| R207 | 1-216-063-00 | METAL GLAZE | 3.9K | 5% | 1/10W |
| R208 | 1-216-053-00 | METAL GLAZE | 1.5K | 5% | 1/10W |
| R209 | 1-216-077-00 | METAL GLAZE | 15K | 5% | 1/10W |
| R210 | 1-216-009-00 | METAL GLAZE | 22 | 5% | 1/10W |
| R211 | 1-216-073-00 | METAL GLAZE | 10K | 5% | 1/10W |
| R212 | 1-216-182-00 | METAL GLAZE | 220 | 5% | 1/8W |
| R214 | 1-216-053-00 | METAL GLAZE | 1.5K | 5% | 1/10W |
| R215 | 1-216-073-00 | METAL GLAZE | 10K | 5% | 1/10W |
| R216 | 1-216-097-00 | METAL GLAZE | 100K | 5% | 1/10W |
| R217 | 1-216-073-00 | METAL GLAZE | 10K | 5% | 1/10W |
| R302 | 1-216-298-00 | METAL GLAZE | 2.2 | 5% | 1/10W |

| Ref.No. | Part No. | Description | | | |
|---|---|---|---|---|---|
| R303 | 1-216-121-00 | METAL GLAZE | 1M | 5% | 1/10W |
| R327 | 1-216-057-00 | METAL GLAZE | 2.2K | 5% | 1/10W |
| R328 | 1-216-057-00 | METAL GLAZE | 2.2K | 5% | 1/10W |
| R419 | 1-216-045-00 | METAL GLAZE | 680 | 5% | 1/10W |
| R420 | 1-216-041-00 | METAL GLAZE | 470 | 5% | 1/10W |
| R421 | 1-216-092-00 | METAL GLAZE | 62K | 5% | 1/10W |
| R422 | 1-216-067-00 | METAL GLAZE | 5.6K | 5% | 1/10W |
| R423 | 1-216-045-00 | METAL GLAZE | 680 | 5% | 1/10W |
| R424 | 1-216-081-00 | METAL GLAZE | 22K | 5% | 1/10W |
| R425 | 1-216-049-00 | METAL GLAZE | 1K | 5% | 1/10W |
| R426 | 1-216-033-00 | METAL GLAZE | 220 | 5% | 1/10W |
| R427 | 1-216-056-00 | METAL GLAZE | 2K | 5% | 1/10W |
| R428 | 1-216-061-00 | METAL GLAZE | 3.3K | 5% | 1/10W |
| R429 | 1-216-095-00 | METAL GLAZE | 82K | 5% | 1/10W |
| R430 | 1-216-061-00 | METAL GLAZE | 3.3K | 5% | 1/10W |
| R431 | 1-216-073-00 | METAL GLAZE | 10K | 5% | 1/10W |
| R437 | 1-216-686-11 | METAL CHIP | 30K | 0.50% | 1/10W |
| R438 | 1-216-053-00 | METAL GLAZE | 1.5K | 5% | 1/10W |
| R439 | 1-216-694-11 | METAL CHIP | 62K | 0.50% | 1/10W |
| R446 | 1-216-009-00 | METAL GLAZE | 22 | 5% | 1/10W |
| R448 | 1-216-041-00 | METAL GLAZE | 470 | 5% | 1/10W |
| R480 | 1-216-025-00 | METAL GLAZE | 100 | 5% | 1/10W |
| R501 | 1-216-024-00 | METAL GLAZE | 91 | 5% | 1/10W |
| R502 | 1-216-069-00 | METAL GLAZE | 6.8K | 5% | 1/10W |
| R503 | 1-216-049-00 | METAL GLAZE | 1K | 5% | 1/10W |
| R504 | 1-216-073-00 | METAL GLAZE | 10K | 5% | 1/10W |
| R506 | 1-216-081-00 | METAL GLAZE | 22K | 5% | 1/10W |
| R508 | 1-216-069-00 | METAL GLAZE | 6.8K | 5% | 1/10W |
| R509 | 1-216-077-00 | METAL GLAZE | 15K | 5% | 1/10W |
| R510 | 1-216-073-00 | METAL GLAZE | 10K | 5% | 1/10W |
| R511 | 1-216-150-00 | METAL GLAZE | 10 | 5% | 1/8W |
| R512 | 1-216-085-00 | METAL GLAZE | 33K | 5% | 1/10W |
| R513 | 1-216-073-00 | METAL GLAZE | 10K | 5% | 1/10W |
| R514 | 1-216-073-00 | METAL GLAZE | 10K | 5% | 1/10W |
| R515 | 1-216-097-00 | METAL GLAZE | 100K | 5% | 1/10W |
| R516 | 1-216-121-00 | METAL GLAZE | 1M | 5% | 1/10W |
| R517 | 1-216-093-00 | METAL GLAZE | 68K | 5% | 1/10W |
| R518 | 1-216-097-00 | METAL GLAZE | 100K | 5% | 1/10W |
| R519 | 1-216-119-00 | METAL GLAZE | 820K | 5% | 1/10W |
| R520 | 1-216-095-00 | METAL GLAZE | 82K | 5% | 1/10W |
| R521 | 1-216-095-00 | METAL GLAZE | 82K | 5% | 1/10W |
| R522 | 1-216-081-00 | METAL GLAZE | 22K | 5% | 1/10W |
| R523 | 1-216-059-00 | METAL GLAZE | 2.7K | 5% | 1/10W |
| R524 | 1-216-089-00 | METAL GLAZE | 47K | 5% | 1/10W |
| R525 | 1-216-097-00 | METAL GLAZE | 100K | 5% | 1/10W |
| R526 | 1-216-114-00 | METAL GLAZE | 510K | 5% | 1/10W |

| Ref.No. | Part No. | Description | | | |
|---|---|---|---|---|---|
| R528 | 1-216-077-00 | METAL GLAZE | 15K | 5% | 1/10W |
| R529 | 1-216-686-11 | METAL CHIP | 30K | 0.50% | 1/10W |
| R530 | 1-216-686-11 | METAL CHIP | 30K | 0.50% | 1/10W |
| R531 | 1-216-059-00 | METAL GLAZE | 2.7K | 5% | 1/10W |
| R532 | 1-216-103-00 | METAL GLAZE | 180K | 5% | 1/10W |
| R533 | 1-216-062-00 | METAL GLAZE | 3.6K | 5% | 1/10W |
| R534 | 1-216-121-00 | METAL GLAZE | 1M | 5% | 1/10W |
| R536 | 1-216-099-00 | METAL GLAZE | 120K | 5% | 1/10W |
| R537 | 1-216-083-00 | METAL GLAZE | 27K | 5% | 1/10W |
| R538 | 1-216-094-00 | METAL GLAZE | 75K | 5% | 1/10W |
| R539 | 1-216-094-00 | METAL GLAZE | 75K | 5% | 1/10W |
| R540 | 1-216-086-00 | METAL GLAZE | 36K | 5% | 1/10W |
| R544 | 1-216-077-00 | METAL GLAZE | 15K | 5% | 1/10W |
| R545 | 1-216-121-00 | METAL GLAZE | 1M | 5% | 1/10W |
| R546 | 1-216-065-00 | METAL GLAZE | 4.7K | 5% | 1/10W |
| R547 | 1-216-057-00 | METAL GLAZE | 2.2K | 5% | 1/10W |
| R548 | 1-216-057-00 | METAL GLAZE | 2.2K | 5% | 1/10W |
| R549 | 1-216-065-00 | METAL GLAZE | 4.7K | 5% | 1/10W |
| R550 | 1-216-049-00 | METAL GLAZE | 1K | 5% | 1/10W |
| R551 | 1-216-049-00 | METAL GLAZE | 1K | 5% | 1/10W |
| R552 | 1-216-081-00 | METAL GLAZE | 22K | 5% | 1/10W |
| R553 | 1-216-049-00 | METAL GLAZE | 1K | 5% | 1/10W |
| R554 | 1-216-033-00 | METAL GLAZE | 220 | 5% | 1/10W |
| R555 | 1-216-081-00 | METAL GLAZE | 22K | 5% | 1/10W |
| R556 | 1-216-073-00 | METAL GLAZE | 10K | 5% | 1/10W |
| R557 | 1-216-049-00 | METAL GLAZE | 1K | 5% | 1/10W |
| R558 | 1-216-073-00 | METAL GLAZE | 10K | 5% | 1/10W |
| R559 | 1-216-065-00 | METAL GLAZE | 4.7K | 5% | 1/10W |
| R560 | 1-216-129-00 | METAL GLAZE | 2.2M | 5% | 1/10W |
| R561 | 1-216-065-00 | METAL GLAZE | 4.7K | 5% | 1/10W |
| R562 | 1-216-097-00 | METAL GLAZE | 100K | 5% | 1/10W |
| R563 | 1-216-121-00 | METAL GLAZE | 1M | 5% | 1/10W |
| R601 | 1-216-097-00 | METAL GLAZE | 100K | 5% | 1/10W |
| R602 | 1-216-089-00 | METAL GLAZE | 47K | 5% | 1/10W |
| R801 | 1-216-089-00 | METAL GLAZE | 47K | 5% | 1/10W |
| R802 | 1-216-238-00 | METAL GLAZE | 47K | 5% | 1/8W |
| R803 | 1-216-109-00 | METAL GLAZE | 330K | 5% | 1/10W |
| R804 | 1-216-041-00 | METAL GLAZE | 470 | 5% | 1/10W |
| R806 | 1-216-089-00 | METAL GLAZE | 47K | 5% | 1/10W |
| R807 | 1-216-073-00 | METAL GLAZE | 10K | 5% | 1/10W |
| R808 | 1-216-053-00 | METAL GLAZE | 1.5K | 5% | 1/10W |
| R809 | 1-216-059-00 | METAL GLAZE | 2.7K | 5% | 1/10W |
| R810 | 1-216-071-00 | METAL GLAZE | 8.2K | 5% | 1/10W |
| R811 | 1-216-077-00 | METAL GLAZE | 15K | 5% | 1/10W |
| R812 | 1-216-077-00 | METAL GLAZE | 15K | 5% | 1/10W |
| R813 | 1-216-077-00 | METAL GLAZE | 15K | 5% | 1/10W |
| R818 | 1-216-121-00 | METAL GLAZE | 1M | 5% | 1/10W |

| Ref.No. | Part No. | Description |
|---|---|---|
| RV301 | 1-237-092-11 | RES, VAR, CARBON 10K/10K (VOLUME) |
| RV401 | 1-228-993-00 | RES, ADJ, CARBON 5K |
| RV501 | 1-228-996-00 | RES, ADJ, CARBON 50K |
| RV502 | 1-228-996-00 | RES, ADJ, CARBON 50K |
| RV503 | 1-228-995-00 | RES, ADJ, CARBON 20K |
| RV504 | 1-230-526-11 | RES, ADJ, METAL GLAZE 47K |
| RV505 | 1-228-990-00 | RES, ADJ, CARBON 1K |
| S401 | 1-571-177-11 | SWITCH, SLIDE (HOLD) |
| S801 | 1-554-911-11 | SWITCH, LEAF (OPEN SWITCH) |
| S803 | 1-554-371-51 | SWITCH, TACT (PLAY/PAUSE) |
| S804 | 1-554-371-51 | SWITCH, TACT (STOP) |
| S805 | 1-554-371-51 | SWITCH, TACT (FF) |
| S806 | 1-554-371-51 | SWITCH, TACT (FR) |
| S807 | 1-571-484-11 | SWITCH, KEY BOARD (PLAY MODE/KEY MODE) |
| S901 | 1-570-112-11 | SWITCH, LEAF (LIMIT) |
| X601 | 1-567-737-11 | VIBRATOR, CRYSTAL 16.9344MHz |
| X801 | 1-567-094-00 | VIBRATOR, CERAMIC 3.58MHz |

ACCESSORY & PACKING MATERIAL

| | | |
|---|---|---|
| ⚠ | 1-463-694-11 | (Canadian).....ADAPTOR, AC (AC-930A) |
| ⚠ | 1-463-700-11 | (UK).....ADAPTOR, AC (AC-930A) |
| ⚠ | 1-463-701-11 | (Austrarian)...ADAPTOR, AC (AC-930A) |
| ⚠ | 1-463-702-11 | (E).....ADAPTOR, AC (AC-950W) |
| ⚠ | 1-463-705-11 | (AEP).....ADAPTOR, AC (AC-940AEP) |
| ⚠ | 1-463-968-11 | (US).....ADAPTOR, AC (AC-940) |
| ⚠ | 1-526-565-00 | (E).....AC PLUG ADAPTOR |
| | 1-555-658-21 | CORD, CONNECTION |
| | 3-786-277-11 | (AEP,UK,E,Austrarian)..MANUAL, INSTRUCTION |
| | 3-786-277-21 | (US,Canadian)..MANUAL, INSTRUCTION |
| | 3-786-277-31 | (Canadian).....MANUAL, INSTRUCTION |
| | 3-786-277-41 | (AEP).....MANUAL, INSTRUCTION |
| | 3-786-356-11 | (UK)...INSTRUCTION |
| * | 4-920-407-01 | BAG, PROTECTION |
| | 4-924-126-01 | BELT, CARRYING |
| | 8-952-266-89 | (UK)...HEADPHONE MDR-A10L/A SET |

| | |
|---|---|
| **Note:**<br>The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.<br>Replace only with part number specified. | **Note:**<br>Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.<br>Ne les remplacer que par une pièce portant le numéro spécifié. |